BR1416/D

# EDUCATORS POCKET GUIDE

• Creating the Impossible •

MOTOROLA

Every day of your career, you're called upon to navigate an infinite universe called creativity. To pursue the unique, the untried. To overcome challenges posed by your own imagination. To solve puzzles you yourself create. At Motorola, we understand the problems you face in the execution of your ideas. And we're eager to help. Working with you, we will help define possibilities. Explain potential. Answer questions. Clear obscurities. In short, we will help your project live up to your imagination. We invite you to share your concepts, perceptions, opinions and problems with us. Together, we will find the right solutions.

# INTRODUCTION

## MOTOROLA UNIVERSITY SUPPORT PROGRAM

Motorola joins the academic community in partnership to help foster and advance tomorrow's engineers, technicians, and scientists. Motorola provides a number of educational support programs to help promote the future leaders of our high-technology industry.

## A COMMITMENT TO THE FUTURE

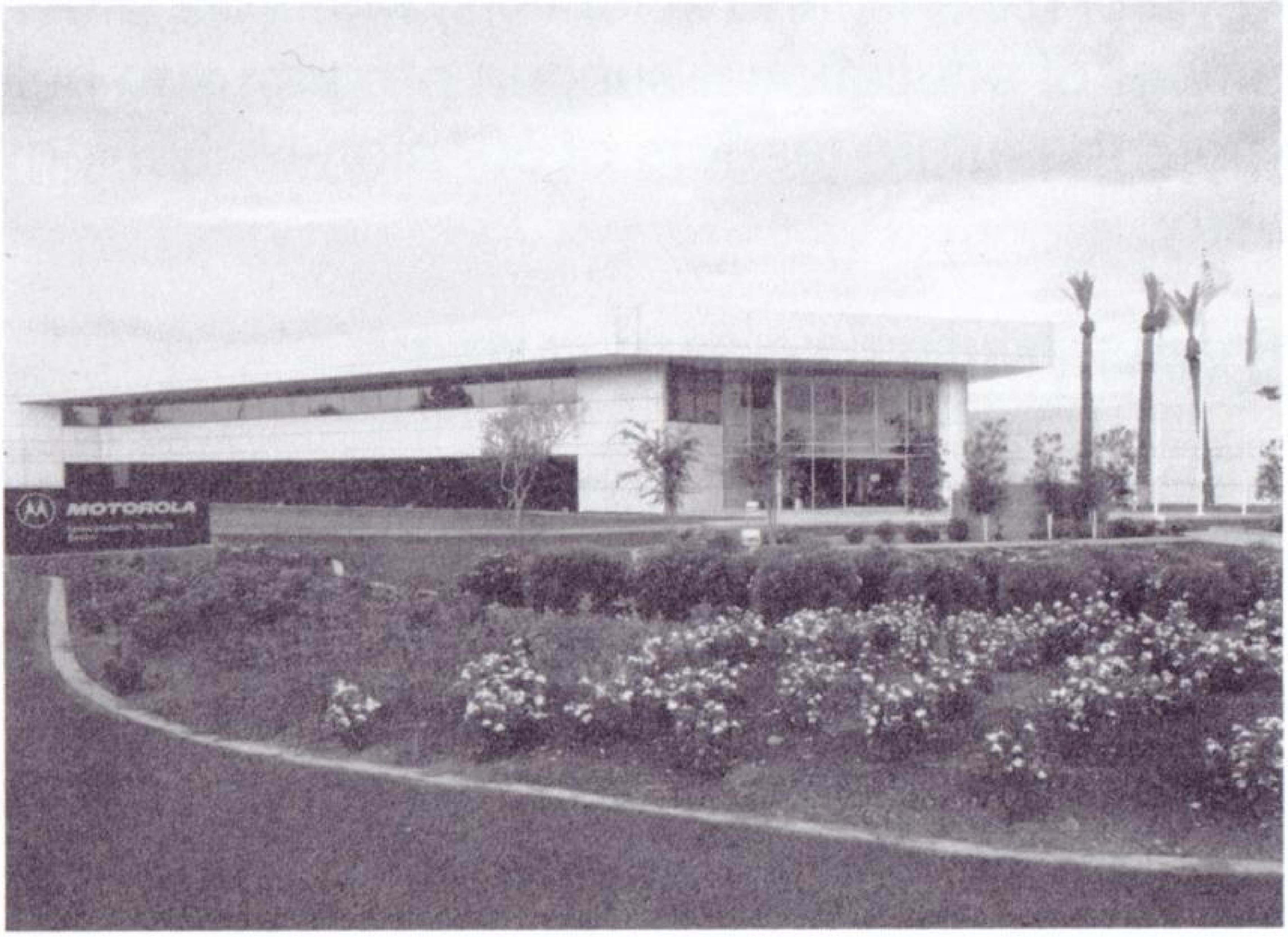
As a world leader in high-tech industry, Motorola is committed to supporting education and the academic community. We look ahead to the never-ending challenges of the future, and commit ourselves to the highest standards of quality in education, technology, service, and manufacturing.

## THE QUEST FOR EXCELLENCE

Motorola is recognized as a leader in quality in manufacturing and service. Motorola received the prestigious Malcolm Baldrige National Quality Award, because they "exemplify the belief that quality counts, first, foremost, and always..."

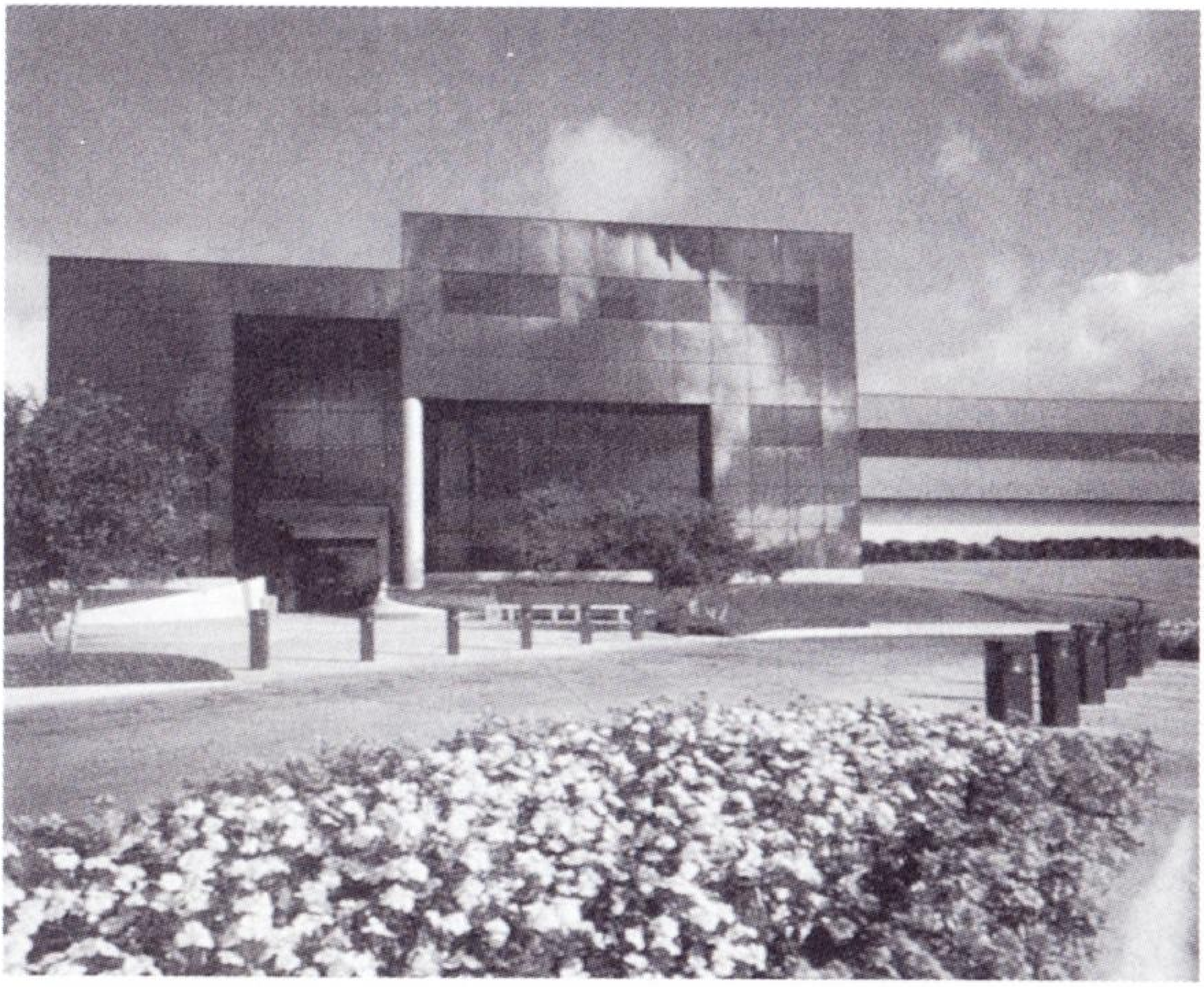
Motorola is committed to quality. The corporate objective is *zero defects* and *SIX SIGMA* specifications in all levels of operation. The quest for excellence includes our commitment to education and the future.

# SECTOR HEADQUARTERS



Sector headquarters, the hub and nerve center of the nation's largest semiconductor producer's dynamics and directions. Here you will find the office of the general manager and sector offices for Technology management, customer relations, world marketing, personnel, six sigma quality, assembly manufacturing and equipment engineering and international operations. The 141,000 square foot facility sits on a 14 acre campus.

# OAK HILL



The Oakhill complex was phased into operation in 1984 and houses the Microcontroller, Microprocessor, DSP, RISC, and the new PowerPC families. The 1,180,000 square foot facility sits on a 150 acre campus.

# THE SECRET

The real secret to receiving information, literature or what ever under the University Support Program is to submit your request in writing!

INFORMATION NEEDED:

| | |
|---|---|
| Your name | department |
| course title | course number |
| course enrollment | material requested |

a physical address for shipping

You may fax your request to either:
602-952-3621 or 512-505-8883

Mail a letter to:

Motorola
univ support
56-106
PO BOX 52072
Phoenix, AZ 85072

Motorola
univ support
suite 450
505 Barton Springs Rd.
Austin, TX 78704

Or use E-Mail at either:

university_support@spshqqm.sps.mot.com
Tony_Plutino-RWDG70@email.sps.mot.com

# HELP WANTED

# WANTED

# REWARD

We would greatly appreciate your help in improving our ability to better serve you the educator.

We are experiencing a tremendous growth of student calls and requests for literature and parts. This load is taxing our ability to respond to you the educator in a timely manner.

We want to continue our support, but would like to deal directly with you the educator or an appointed T/A, lab-tech, or a personage of your choice to collect requests and forward those to University Support once or twice a month as needed.

This way we can reward you the educator with much better service and not have our phones over loaded with hundreds of student calls.

THANK YOU FOR YOUR HELP!!

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# LITERATURE SUPPORT

Motorola will provide up to five (5) sets of free technical data books to the requesting institution for their engineering laboratory and/or library. These sets consist of over 125 volumes of technical information on Motorola's Semiconductor Products Sector components.

There are many additional support documents available free or at special discounted prices. These include handbooks, user manuals, application notes, data sheets, selector guides, brochures, and article reprints. These documents provide instructors and students with the latest information available on products currently being used by the world's top electronic engineering firms.

An institution may request up to five (5) sets of Motorola reference books. If more are needed, Motorola will extend special low-cost pricing to your bookstore or arrange for direct purchases. Literature donations are subject to Motorola's discretion and availability.

For more information on Motorola's free reference materials and special pricing, send us a letter or fax the letter on institutional letterhead to Motorola University Support. (refer to THE SECRET page vi.)

The following pages list several of the most commonly requested manuals with a brief description of the document. The list is by no means complete. If you don't find the manual you need, please fax a note requesting the desired information.

# DATA BOOKS

**DL110/D RF DEVICE DATA** Provides data sheet information on Motorola's extensive range of RF products. Volume 1 contains over 1400 pages of data on discrete transistors, plus a comprehensive selector guide listing the devices under a variety of application, frequency band and package classifications. Volume 2 includes RF amplifier modules and diodes with a selector guide and 396 pages of application notes. Case dimensions and a competitor cross-reference are included. 2 VOL. SET

**DL111/D BIPOLAR POWER TRANSISTOR DATA**
Motorola Produces more than 1100 off-the-shelf power transistors covering a very wide range of applications. Their electrical, thermal and mechanical characteristics are presented here in the form of data sheets with a competitor cross-reference and a selector guide showing devices by package, product category and major application.

**DL118/D OPTOELECTRONICS DEVICE DATA** In the optoelectronics field Motorola has concentrated on infrared GaAs and GaA/As emitters, silicon detectors, high-technology optocouplers/isolators, and an innovative approach to fiber optics. This data book contains up-to-date information on the complete product line. A selector guide and industry cross-reference follow a general introduction and quality/ reliability data. Data sheets are grouped in sections covering Discrete Emitters/Detectors, Fiber Optic Components, Optoisolators/Optocouplers, Slotted Optical Switches and Opto Chips. Includes 82 pages of application notes.

# DATA BOOKS

**DL121/D FAST and LS TTL DATA** Low power Schottky (LSTTL) has become the industry-standard logic in recent years replacing the original 7400 TTL with lower power and higher operating speeds. In addition to producing the standard LS TTL circuits, Motorola also offers the FAST™ Schottky TTL family. Complete specifications for both LS and FAST families are provided here in data sheet form. Functional selector guide provides an overview of the principal characteristics of the two families.

**DL122/D MECL DEVICE DATA** Presents full technical data for Motorola's monolithic Emitter Coupled Logic families. MECL 10H, MECL 10K and MECL III, plus MECL memories and Phase-Locked Loop products. MECL offers very high speeds with propagation delays down to 1.0 ns for use in computer systems, high-performance ATE and process control systems, signal processors and navigation systems. The families also offer other advantages which combine to reduce package count and simplify system design. This book includes a technical introduction to MECL and a detailed discussion of system design considerations.

**DL126/D SMALL-SIGNAL TRANSISTORS, FETs AND DIODES** Presents technical information for the several families that make up Motorola's small-signal semiconductor product range, including bipolars, FETs and diodes. Complete device specifications and typical performance curves are given on individual data sheets, which are grouped by families and by their metal can and plastic surface mount packages. A selector guide provides a quick comparison of performance characteristics. Additional section describes package outline drawings and tape and reel specifications and clarify the Hi-Rel processing and testing procedures.

# DATA BOOKS

**DL128/D LINEAR AND INTERFACE INTEGRATED CIRCUITS** Presents detailed information in the form of data sheets on Motorola's broad range of linear and interface ICs. Products are divided into 10 sections, including Amplifiers and comparators, power Supply Circuits, Motor Control, Voltage References, Data Conversion, Interface Circuits, Communications, Consumer and Automotive. Each section includes its own comprehensive selector guide, while an industry cross-reference lists over 3,000 products with their Motorola direct or similar replacements. Full mechanical data is provided, plus a listing of device availability for surface mount. 2 VOL. SET

**DL129/D HIGH SPEED CMOS LOGIC DATA** For many years CMOS devices have been used in applications where low-power consumption, wide-power-supply range and high-noise immunity are the important factors. For higher speed applications designers were forced to sacrifice the CMOS benefits and choose families such as LSTTL. Motorola's High Speed CMOS Family is fast enough for such applications while retaining the CMOS features. The HSCMOS Data Book includes a selector guide by function, a discussion of design and handling considerations, and a full electrical and performance data in the form of data sheets.

**DL130/D CMOS APPLICATIONS-SPECIFIC STANDARD ICs For PLL** Frequency Synthesizers and Remote Control functions, see DL136/D Rev 3. For CMOS ADCs/DACs, Decoders/Display Drivers, Op Amps/Comparators, Smoke Detectors, Real-Time Clock and Comb Filters request data sheets by device number.

# DATA BOOKS

**DL131/D CMOS LOGIC DATA** Presents technical data for Motorola's broad line of Metal-Gate CMOS Logic ICs. Complete specifications are provided in the form of data sheets. In addition, a product selector guide and a handling and design guideline chapter are included for further information. Includes data on all the logic circuits from the MC14000 series.

**DL135/D TMOS POWER MOSFET TRANSISTOR DATA** Power MOSFETs offer unique characteristics and capabilities that are not available with bipolar power transistors. They have high switching speeds, simpler gate drive requirements, reduced need for snubber circuits, and low ON-voltages. This book provides a comprehensive selector guide by package and full data on all Motorola's TMOS® Power MOSFETs in the form of data sheets. It contains more than 200 pages of theory and application information in 15 chapters, including gate drive requirements, paralleling and characterization, plus a number of specific designs.

**DL136/D COMMUNICATIONS DEVICE DATA** Motorola is a major supplier of semiconductors to communication equipment manufactures worldwide. This book includes complete specifications for a wide variety of devices designed for this market in the form of over 950 pages of data sheets. A selector guide is included to simplify the task of choosing appropriate devices for a system. Application information, handling and design guidelines, and quality and reliability overviews provide additional support for users of these circuits.

# DATA BOOKS

**DL137/D THRYSISTOR DEVICE DATA** Thyristors are extremely useful across a broad range of control applications. Compared to a mechanical switch, a thyristor has a long service life and fast switching time; its regenerative action and low ON-resistance allow it to be used to control AC loads as well as for simple switching tasks. Thyristor Device Data presents data sheet information plus a comprehensive selector guide and industry cross-reference on Motorola's thyristor families, including SCRs, Triacs, GTOs, and trigger devices. It includes 252 pages of theory and application information.

**DL138/D FACT DATA Fact™** uses a sub-2 silicon gate CMOS process to attain speeds similar to Advanced Low Power Schottky while retaining the ultra-low power and high-noise immunity of CMOS logic. It also offers superior line driving characteristics and excellent ESD and latchup immunity. This data book describes Motorola's product line with device specifications and a selector guide, plus over 30 pages of design comparisons with previous technologies.

**DL140/D ECLinPS** This data book contains device specifications in the form of data sheets for Motorola's ECLinPS advanced Emitter Coupled Logic Family. ECLinPS (ECL in picoseconds) was developed in response to demand for an even higher performance logic family of standard logic functions, especially for the computer, ATE, instrumentation and communication industries. ECLinPS offers a maximum single gate delay of 500 ps including package delay and a flip-flop toggle frequency up to 800 MHz. Each function is available with either MECL 10H or 100K compatibility.

# DATA BOOKS

**DL144/D COMMERCIAL PLUS and Mill/AERO APPLICATIONS MEMORY PRODUCTS** This book presents technical data for a broad line of Motorola (Commercial Plus and Mill/Aero Applications) Memory products. Complete specifications for the individual circuits are provided in the form of data sheets.

**DL145/D MILITARY MECL FAMILY DATA** This book thoroughly addresses the use of numerous Motorola Military integrated circuits including MECL, ECLinPs, and phase-locked loop (PLL) devices. The book explores technical and operational data, electrical characteristics, system design considerations, and system basics in detail. Complete specifications for the individual circuits are provided in the form of data sheets.

**DL148/D DISCRETE MILITARY OPERATIONS DATA** Defines Motorola's current line of semiconductor or components available for military and other high-reliability applications. The components include MIL-Qualified products as well as standardized MIL-Processed components and chips which are not QPL approved but are, nevertheless, processed to corresponding JAN, JANTX, JANTXV and JANS specifications for equivalent reliability.

# DATA BOOKS

**DL150/D TVS/ZENER DEVICE DATA** Presents technical data for Motorola Transient Voltage Suppressors and Zener Diodes. Complete specifications for the individual devices are provided in the form of data sheets. A comprehensive selector guide and industry cross-reference are included to simplify the task of choosing the best of components required for a specific application. For the first time this book includes theory and application information in addition to the actual product-specific data. The actual layout had been revised to be more user friendly with sections on the three major categories of Zener Diodes - Regulation, Temperature Compensation, and Transient Voltage Protection.

**DL151/D RECTIFIER DEVICE DATA** This book presents technical data for Motorola's broad line of rectifiers. Complete specifications are provided in the form of data sheets, and accompanying selection guides prove a quick comparison of characteristics to simplify the task of choosing the best device for a circuit. Continuing investment in research and development for discrete products has led to a rectifier manufacturing facility that matches the precision and versatility of the most advanced integrated circuits. As a result, Motorola's silicon rectifiers span all application categories with quality levels capable of passing the most stringent environment tests, including those for automotive under-hood applications.

# DATA BOOKS

**DL152/D MDA 15 CMOS STANDARD CELL DATA**
Motorola's MDA 15 Standard Cell family features a common set of cells and design rules for 1.5 micron geometries. This book provides data sheet information on all the digital and analog cells in the library. It discusses the factors that affect production costs and describes the development cycle. Technical chapters consider timing, design matter, standard input and output configurations and designing for testability.

**DL154/D MDA08 CMOS STANDARD CELL DATA**
Motorola's MDA12 Standard Cell family features a common set of cells and design rules for 1.2 micron geometries. This book provides data sheet information on all the digital and analog cells in the library. It discusses the factors that affect production costs and describes the development cycle. Technical chapters consider timing, design matter, standard input and output configurations and designing for testability.

**DL155/D DYNAMIC RAM DATA** Motorola offers a broad range of reliability dynamic RAMs and Dram modules for virtually any digital data processing system application. Complete specifications for the individual circuits are provided in the form of data sheets. A selector guide and a cross-reference are included.

**DL156/D FAST STATIC RAM BICMOS, CMOS AND MODULE DATA** Motorola offers a broad range of fast SRAMs for virtually any digital data processing system application. This data book contains complete specifications for individual FSRAM circuits in data sheet form, as well as an explanation of Motorola's reliability and quality program and an application section.

# DATA BOOKS

**DL200/D PRESSURE SENSOR DEVICE DATA**

Motorola is pleased to introduce their first Pressure Sensor Data Book. This data book provides technical information on Motorola's pressure and temperature sensor products. Specifications are provided in the form of data sheets for individual devices, and application notes describe interface circuitry to assist the end user. Additional sections provide reliability information, advanced new product information., package outline drawings, and information on sensor evaluation boards.

# NOTE

There are no data books for the Microcontroller, Microprocessor, Digital Signal Processor, or RISC Processor families. You must request the user manual or oversized data sheet for the specific Microcontroller or Microprocessor you are interested in.

**EXAMPLE**

MC68HC11A8/D – covers the data specs for the HC11A Family of Parts. A0, A1, A8

# APPLICATIONS MANUALS

**DL408/D 8-BIT MCU APPLICATION MANUAL** This manual is a compilation of Application Notes, Article Reprints and other application literature relating to Motorola's range of 8-bit Microcomputer Units (MCUs). The documents were published originally by Motorola under the references shown in the contents list. Specific data on all Motorola products, including the 8-bit MCU devices mentioned in this manual, can be obtained through Motorola's franchised distributors and sales offices.

**DL409/D 16/32-BIT APPLICATIONS MANUAL** This manual is a compilation of Application Notes, Article Reprints and other application literature relating to Motorola's range of 16- and 32-bit microprocessors and peripherals. The documents were published originally by Motorola under the references shown in the contents list. Specific data on all Motorola products, including the power devices mentioned in this manual, can be obtained through Motorola's franchised distributors and sales offices.

**DL410/D POWER APPLICATIONS MANUAL** This manual is a compilation of 60 Application Notes, Article Reprints and other application literature relating to Motorola's range of power semiconductors. A device cross reference indicates where specific components are featured in application documents in the manual; in addition to the index, an abstract of each document is provided as an aid to the location of particular topics.

# APPLICATIONS MANUALS

**DL411/D COMMUNICATIONS APPLICATIONS MANUAL**
This manual is a compilation of 44 Application Notes, Article Reprints and other application literature relating to Motorola's semiconductors for communication and related applications. A device cross-reference indicates where specific components are featured in application documents in the manual, and an abstract of each document is provided in addition to the index. Topics range from Speakerphones and Key Systems to FM Receivers, from Fiber Optics to DSP, from RS232 to MAP and ISDN.

**DL412/D INDUSTRIAL CONTROL APPLICATIONS MANUAL** This manual is a compilation of 42 Application Notes and other application literature relating to Motorola's semiconductors for Industrial Control Applications. A Device Cross-Reference indicates where specific components are featured in application documents in the manual, and an abstract of each document is provided in addition to the index. Topics include temperature and pressure measurements, A/D conversion for industrial application, motor control and industrial interfacing.

**DL413/D RADIO CONTROL APPLICATIONS MANUAL**
This manual is a compilation of 37 Application Notes and other application literature relating to Motorola's semiconductors for Radio and Video application. A device cross-reference indicates where specific components are featured in application documents in the manual, and an abstract of each document is provided in addition to the index. Topics include RF amplifier designs, the application of Motorola's TV ICs, designing for very high-speed logic, and PLL fundamentals.

# APPLICATIONS MANUALS

**DL414/D FET APPLICATIONS MANUAL** A compilation of 34 application documents concerned with Motorola's FETs for small signal, audio and power applications. A device cross-reference indicates where specific components are featured in the application documents in the manual, and an abstract of each document is provided in addition to the index. Topics include MOSFET/bipolar comparisons, the application of MOSFETs in motor control and switching power supplies, driving MOSFETs from logic and other sources, and audio and VHF MOSFET-based amplifiers.

# NOTE

**BR135 APPLICATION NOTE BROCHURE** This guide to the Application Literature includes a Selector Guide listing of all the documents under subject or device-type headings, and a Device Cross-Reference listing for each Featured Device.

# HC05 FAMILY

**M6805UM/AD3 M6805 HMOS/M146805 CMOS FAMILY USER'S MANUAL** Provides users with concise information on Motorola's M6805 HMOS and M146805 CMOS microcomputer families. Thorough descriptions and instructions are given beginning with a general description and introduction to the families and including details of the hardware and software features illustrated with many standard applications. More advanced applications are covered by reprinted application notes. The manual concludes with detailed definition of each instruction, arranged in alphanumeric order with a cycle-by-cycle operation summary.

**M68HC05AG/AD M68HC05 APPLICATIONS GUIDE**
Assumes no knowledge of microcontrollers and no MCU application experience. Provides a basic but thorough introduction to the features and operation of microcontrollers, followed by a chapter describing the architecture, addressing modes, instruction set, communication and timer of the MC68HC705C8. The final section traces the development of the hardware and software for a practical application (a home thermostat project) with circuit diagram and full software listing. Full M68HC05 instruction set details are given in an appendix, and the book ends with 50 review questions based on the guide.

# HC05 FAMILY

**CPU08RM/AD M68HC08 CENTRAL PROCESSOR UNIT** The CPU08 is the central processing unit (CPU) of the Motorola M68HC08 Family of microcontroller units (MCUs). The fully object-code-compatible CPU08 offers M68HC05 users increased performance with no loss of time or software investment in their HC05-based applications. The CPU08 also appeals to users of other MCU architecture who need the CPU08 combination of speed, low power, processing capabilities and cost effectiveness.

**HC05 POCKET GUIDES PROGRAMMING REFERENCE GUIDES** A convenient pocket-sized guide providing quick access to essential information such as the programming model, crystal dependent timing, interrupt vectors, memory map, op code maps, instructions, addressing modes, execution times, registers and control bits and pin assignments.

**MC68HC05CXRG/AD MC68HC05 PROGRAMMING REFERENCE GUIDE** A convenient pocket-sized guide providing quick access to essential MC68HC05 family information.

**MC68HC08RG/AD MC68HC08 PROGRAMMING REFERENCE GUIDE** A convenient pocket-sized guide providing quick access to essential MC68HC08 family information.

# HC05 FAMILY

The HC05 family of Microcontrollers are found as oversized data sheets or books on the respective microcontroller you are interested in.
such as:

| | |
|---|---|
| **MC68HC05A6/D** | Microcontrollers |
| **MC68HC05C4/D** | Microcontrollers |
| **MC68HC05P8/D** | Microcontrollers |

ETC......

(This is not a complete list) for a complete listing of HC05 microcontrollers, request your copy of SG165/D selector guide.)

# HC11 FAMILY

**M68HC11RM/AD M68HC11 FAMILY PROGRAMMERS REFERENCE MANUAL** A valuable aid in the development of M68HC11 applications. Detailed descriptions of all internal subsystems have been developed and checked against Motorola internal design documentation, making it perhaps the most comprehensive reference manual available for the M68HC11 family; it complements the data sheet but does not replace it. Practical applications demonstrate the operation of each subsystem. They are treated as complete systems, including hardware/ software interactions and trade-offs. Discusses interfacing techniques to prevent component damage and efficient use of the instruction set.

**M6809PM/AD MC6809-MC6809E MICROPROCESSOR PROGRAMMING MANUAL** The MC6809 and MC6809E are greatly enhanced, upward compatible and faster extensions of the MC68000MPU. This programming manual provides details of the additional features, the addressing modes and programming considerations, and assumes some familiarity with the MC6800. Detailed information about each instruction is given in an instruction-per-page format, arranged in alphabetical order of mnemonic. The commands and codes of the ASSISST09 Monitor Program are also included.

**PROGRAMMING REFERENCE GUIDES** Convenient pocket-sized guide providing quick access to essential information such as the programming model, crystal dependent timing, interrupt vectors, memory map, op code maps, instructions, addressing modes, execution times, registers and control bits and pin assignments.

# HC11 FAMILY

**MC68HC11A8RG/AD M68HC11A8 PROGRAMMING REFERENCE GUIDE** A convenient pocket-sized guide providing quick access to essential MC68HC11A8 information.

**MC68HC11D3RG/AD MC68HC11D3 AND MC68HC711D3 PROGRAMMING REFERENCE GUIDE** A convenient pocket-sized guide providing quick access to essential MC68HC11D3 and MC68HC711D3 information.

**MC68HC11ERG/AD MC68HC11E PROGRAMMING REFERENCE GUIDE** A convenient pocket-sized guide providing quick access to essential MC68HC11E family information.

**MC68HC11F1RG/AD MC68HC11F1 PROGRAMMING REFERENCE GUIDE** A convenient pocket-sized guide providing quick access to essential MC68HC11F1 information.

**MC68HC11K4RG/AD MC68HC11K4 AND MC68HC711K4 PROGRAMMING REFERENCE GUIDE** A convenient pocket-sized guide providing quick access to essential MC68HC11K4 and MC68HC711K4 information.

# HC11 FAMILY

**MC68HC11KA4RG/AD MC68HC11KA4 AND MC68HC711KA4 PROGRAMMING REFERENCE GUIDE** A convenient pocket-sized guide providing quick access to essential MC68HC11KA4 and MC68HC711KA4 information.

**MC68HC11L6RG/AD MC68HC11L6 AND MC68HC711L6 PROGRAMMING REFERENCE GUIDE** A convenient pocket-sized guide providing quick access to essential MC68HC11L6 and MC68HC711L6 information.

# NOTE

The HC11 Family of Microcontrollers are found as oversized data sheets or books on the respective HC11 Microcontroller you may be interested in.
such as:

**MC68HC11A8/D** family of microcontrollers
**MC68HC11E/D** family of microcontrollers
**MC68HC11K4/D** family of microcontrollers
ETC.

(THIS IS NOT A complete LIST)
For a complete listing of the advanced Microcontroller Family of devices request your copy of SG166/D Selector Guide.

# HC16 FAMILY

**CPU16RM/AD MODULAR MICROCONTROLLER FAMILY CENTRAL PROCESSOR UNIT (CPU16) REFERENCE MANUAL** The CPU16 is a standardized module used in the M68HC16 modular microcontroller family. It is designed for rapid manufacture of custom devices. The CPU16 is interconnected to other modules in the MCU via the intermodule bus (IMB). The CPU16 provides compatibility with the M68HC11, and additional capabilities associated with 16- and 32-bit data sizes, 20-bit addressing, and digital signal processing. This manual describes the capabilities, operation and functions of the CPU16.

**GPTRM/AD GENERAL PURPOSE TIMER (GPT) REFERENCE MANUAL** The GPT is a standardized module used in the M68300 and M68HC16 modular microcontroller families. It is designed for rapid manufacture of custom devices. The GPT is interconnected to other modules in the MCU via the intermodule bus (IMB). The GPT is a simple yet flexible 11-channel timer for use in systems where a moderate level of CPU control is required. This manual describes the capabilities, operation, and function of the GPT.

**QSMRM/AD QUEUED SERIAL MODULE (QSM) REFERENCE MANUAL** The QSM is a standard module used in the M68300 and M68HC16 modular microcontroller families. It is designed for rapid manufacture of custom devices. The QSM is interconnected to other modules in the MCU via the intermodule bus (IMB). The QSM provides a queued serial peripheral interface (QSPI) and a serial communication interface (SCI). This manual describes the functions, capabilities, and operation of the QSM and provides application information for using the QSPI for analog data acquisition.

# HC16 FAMILY

**SIMRM/AD SYSTEM INTEGRATION MODULE (SIM) REFERENCE MANUAL** The SIM is a standardized module used in the M68300 and M68HC16 modular microcontroller families. It is designed for rapid manufacture of custom devices. The SIM is interconnected to other modules in the MCU via the intermodule bus (IMB). QSM features include external bus support. 12 programmable chip select outputs, system protection logic, system clock, watchdog timer, clock monitor, and test/debug submodule. This manual describes its capabilities, operation and functions.

**MC68HC16Z1UM/AD MC68HC16Z1 USER'S MANUAL** THE MC68HC16Z1 is a member of the M68HC16 modular microcontroller family. Modular microcontrollers are built up from standardized modules interconnected by an intermodule bus (IMB). The MC68HC16Z1 incorporates a 16-bit central processing unit (CPU16), a system integration module (SIM), an 8-/10-bit analog-to-digital converter (ADC), a queued serial module 9QSM), a general-purpose timer (GPT), and a 2048-byte standby RAM (SRAM). This manual provides sufficient information for normal operation of the MC68HC16Z1. Supplemental reference manuals for specific modules provide more detailed information, should a need arise.

## MC68HC16Y1UM/AD MC68HC16Y1 USER'S MANUAL

The MC68HC16Y1 is a high-speed 16-bit control unit that is upwardly code compatible with M68HC11 controllers. The MC68HC16Y1 incorporates a 16-bit central processing unit (CPU16), a single-chip integration module (SCIM), an 8/10-bit analog-to-digital converter (ADC), a multichannel communication interface (MCCI), a general-purpose timer (GPT), a time processing unit (TPU), a 2-kbyte standby RAM module with TPU emulation capability (TPURAM) and a 48-kbyte masked ROM module (MRM). All of these modules are interconnected by the intermodule bus (IMB).

## MC68HC16Z2UM/AD MC68HC16Z2 USER'S MANUAL

The MC68HC16Z2 is a high-speed 16-bit control unit that is compatible with M68HC11 controllers. It is a member of the M68HC16 Family of modular microcontrollers.

The MC68HC16Z2 incorporates a true 16-bit central processing unit (CPU16), a system integration module (SIM), an 8/10-bit analog-to-digital converter (ADC), a queued serial module (QSM), a general-purpose timer (GPT), a 2048-byte standby RAM (SRAM), and an 8-kbyte masked ROM module (MRM). These modules are interconnected by the intermodule bus (IMB).

# 68300 FAMILY

**CPU32RM/AD (CPU32) REFERENCE MANUAL** The CPU32 is a standardized module used in the M68300 modular microcontroller family. It is designed for rapid manufacture of custom devices. The CPU32 is interconnected to other modules in the MCU via the intermodule bus (IMB). The CPU32 is based on the industry-standard MC68000 processor and has many features of the MC68010 and MC68020, as well as unique features suited for high-performance controller applications. This manual describes the capabilities, operation and functions of the CPU32.

**TPURM/AD (TPU) REFERENCE MANUAL** The TPU is a standardized module used in the M68300 and M68HC16 modular microcontroller families. It is designed for rapid manufacture of custom devices. The TPU is interconnected to other modules in the MCU via the intermodule bus (IME). The TPU performs simple as well as complex timing task and offers high-resolution timing and multiple time function capability. This manual describes the capabilities, operation, and functions of the TPU module.

**SIMRM/AD SYSTEM INTEGRATION MODULE (SIM) REFERENCE MANUAL** The SIM is a standardized module used in the M68300 and M68HC16 modular microcontroller families. It is designed for rapid manufacture of custom devices. The SIM is interconnected to other modules in the MCU via the intermodule bus (IMB). QSM features include external bus support. 12 programmable chip select outputs, system protection logic, system clock, watchdog timer, clock monitor, and test/debug submodule. This manual describes its capabilities, operation and functions.

# 68300 FAMILY

**MC68302UM/AD MC68302 INTEGRATED MULTI-PROCESSOR USER'S MANUAL** This MC68302 IMP is a VLSI device incorporating the main building blocks needed to design a wide variety of powerful communication controllers. It may be configured to support 5 different protocols, any three operating simultaneously. This manual describes its architecture; the MC68000 processor core on which it is based; the System Integration Block which provides basic timing and interfacing functions required by virtually every application: the Communications Processor which includes 3 independent serial channels with 6 DMA controllers; plus signal descriptions and electrical characteristics.

**MC68306UM/AD MC68306UM INTEGRATED EC000 PROCESSOR USER'S MANUAL** The MC68306 Integrated Processor User's Manual describes the programming, capabilities, registers, and operation of the MC68306; the MC68000 Family Programmers Manual provides instruction details for the MC68306; and the MC68306 EC000 Integrated Processor Product Brief provides a brief description of the MC68306UM/AD.

**MC68330UM/AD MC68330 INTEGRATED CPU PROCESSOR USER'S MANUAL** The MC68330 is a member of the M68300 family. Modular microcontrollers are built up from standardized modules interconnected by an intermodule bus (MB).. The MC68330 incorporates a 32-bit central processing unit (CPU32) and the system integration module (SIM40). This manual describes the programming, capabilities, registers, and operation of the MC68330.

# 68300 FAMILY

**MC68331UM/AD MC68331 USER'S MANUAL MANUAL** The MC68331 is a member of the M68300 modular microcontroller family. Modular microcontrollers are built up from standardized modules interconnected by an intermodule bus (MB). The MC68331 incorporates a 32-bit central processing unit (CPU), and intergration module (SIM), a general-purpose timer (GPT) module, and a queued serial module (QSM). This manual provides sufficient information for normal operation of the MC68331. Supplemental reference manuals for specific modules provide more detailed information, should a need arise.

**MC68332UM/AD MC68332 USER'S MANUAL** The MC68332 is a member of the M68300 modular microcontroller family. Modular Microcontrollers are built up from standardized modules interconnected by an intermodule bus (IMB). The MC68332 incorporates a 32-bit central processing unit (CPU32), an integration module (SIM), a time processor unit (TPU), a queued serial module (QSM), and a 2048-byte standby RAM (SRAM). This manual provides sufficient information for normal operation of the MC68332. Supplemental reference manuals for specific modules provide more detailed information, should a need arise.

**MC68F333UM/AD MC68F333 USER'S MANUAL** The MC68F333, a 32-bit highly-integrated micontroller, combines high-performance data manipulation capabilities with powerful peripheral subsystems. The MC68F333 incorporates a 32-bit CPU (CPU32), a single-chip integration module (SCIM), an 8-channel, 10-bit analog-to-digital converter (ADC), a time processor unit (TPU), a queued serial module (QSM), a 512-byte standby RAM (SRAM), a 3.5-kbyte RAM with TPU emulation capabilities (TPURAM), and two flash EEPROM modules (FLASH16, FLASH48). These modules are connected to the CPU32 by the intermodule bus (IMB).

**MC68349UM/AD DRAGON 1 HIGH PERFORMANCE INTEGRATED PROCESSOR USER'S MANUAL** The MC68349 Dragon 1 is the highest performance member of the Motorola M68300 family if integrated processors. The MC68349 is designed to serve as the central processor of personal intelligent communicators and similar products requiring an optimal balance of performance, integration, cost and power consumption. The Mc68349 is the first in a series of MC68300 family integrated processors designed specifically to support rigorous requirements of consumer-oriented intelligent personal electronics.

# 68000 FAMILY

**M68000FR/AD M68000 FAMILY REFERENCE**
Assembles the technical summaries of devices in the M68000 family into one convenient reference handbook. Includes all the M68000 MPUs up to the MC68030. Following a selector guide, products are grouped under six section headings: Processors, Coprocessors, DMA Controllers, Data Communication Devices, Network Devices and General Purpose Peripherals. Mechanical data on all the packages is provided, plus notes on Motorola's technical support.

**M68000PM/AD M68000 FAMILY PROGRAMMER'S REFERENCE MANUAL** Contains detailed information in an instruction-per-page format on each of the instructions used by the MPUs and coprocessors in the M68000 family. Includes MPUs from the MC68000 to the MC68040, the MC68851 PMMU, the MC68881 and MC68882 Floating-Point Coprocessors, and the CPU32 processor core used in the M68300 family. The manual is divided into Integer Instructions, Floating-Point Instructions, Supervisor (Privileged) Instructions, and CPU32 Instructions and Addressing Modes. A format summary lists all the instructions in binary format, and a processor/instruction cross-reference is included.

# 68000 FAMILY

**M68000UM/AD M68000 8-16-32-BIT MICROPROCESSORS USER'S MANUAL** Provides hardware details and programming information for the MC68000, MC68008, MC68010 AND MC68HC/EC000 microprocessors. The MC68008 has an 8-bit data bus and smaller addressing range. The MC68010 introduced virtual memory to the family and has a few different instructions The MC68HC/EC000 uses about 10% of the power of the MC68000; otherwise the devices are very similar. The manual fully describes their electrical and operating characteristics, noting any differences, and includes a summary of the instruction set. Refer to MC68000PM/AD Programmer's Reference Manual for complete details on the instruction set.

**M68020UM/AD M68020 32-BIT MICROPROCESSOR USER'S MANUAL** This manual describes the capabilities, operation and programming of the MC68020 second-generation, 32-bit enhanced microprocessor and the MC68EC020 enhanced embedded microprocessor. Refer to M68000PM/AD, Programmer's Reference Manual for complete details on the instruction set.

# 68000 FAMILY

**MC68030UM/AD MC68030 ENHANCED 32-BIT MPU USER'S MANUAL, THIRD EDITION** The MC68030 is a second-generation 32-bit MPU in Motorola's M68000 family. It combines a CPU core, instruction and data caches, bus controller and memory management unit in a single VLSI device. This manual describes its capabilities, operation and programming. Sections include data organization and addressing, instruction set summary, processing states, signal description, on-chip caches, bus operation, exception processing, memory management unit, coprocessor interface, instruction timing, application information, electrical specifications and mechanical data.

**M68040UM/AD M68040 32-BIT THIRD-GENERATION MICROPROCESSOR USER'S MANUAL** This manual describes the capabilities, operation and programming of the MC68040, MC68EC040, and MC68LC040 third-generation 32-bit MPUs. Multiple concurrent execution units and a highly integrated architecture achieve very high performance. Cache functionality is enhanced by on-chip bus snooping logic to support multi-master applications. Refer to MC68000PM/AD Programmer's Reference Manual for complete details on the instruction set.

# 68000 FAMILY

**MC68060/D DATA SHEET** The superscalar M68060 represents a new line of Motorola microprocessor products. The first generation of the M68060 product line consist of the MC68LC060, and MC68EC060. All three microprocessors offer superscalar inteqer performance of over 100 MIPS at 66 MHz. The MC68060 comes fully equipped with both a floating-point unit (FPU) and a memory management unit (MMU) for high-performance embedded control and desktop applications.

The documents listed in the following table contain detailed information on the MC68060.

| DOCUMENT TITLE | ORDER NUMBER | CONTENTS |
|---|---|---|
| M68060 User's Man | M68060UM/AD | Detailed info.for design |
| M68000 Prog. Man | M68000PM/AD | M68000 fam.inst.set |
| The 68K Source | BR729/D | Independent vendor listing supporting software and development tools |
| 3.3 Volt Logic | BR1407/D | Low voltage interface & Circuits components |

**MC68340UM/AD MC68340 INTEGRATED PROCESSOR WITH DMA USER'S MANUAL** The MC68340 is a member of the M68300 modular micontroller family. Modular microcontrollers are built up from standardized modules interconnected by an intermodule bus (IMB). The MC68340 incorporates a 32-bit central processing unit (CPU32) and the system integration module (SIM40). This manual describes the programming, capabilities, registers, and operation of the MC68340.

**MC68851UM/AD MC68851 PAGED MANAGEMENT UNIT USER'S MANUAL** The MC68851 is a high-performance PMMU designed to operate as a coprocessor to the MC68020 32-bit microprocessor. It performs very fast logical-to-physical address translations, and provides a comprehensive access control and protection mechanism with extensive support for paged virtual memory systems. This manual fully describes its functional and electrical characteristics, with extensive timing diagrams and detailed descriptions of each instruction. Includes a discussion of hardware and software considerations for designers.

**MC68881UM/AD MC68881/MC68882 FLOATING-POINT COPROCESSOR USER'S MANUAL** The MC68881 and MC68882 fully implement the ANSI-IEEE754-1985 standard for Binary Floating-Point Arithmetic and are implemented in VLSI technology to provide the highest possible functionality in a physically small device. They are intended to be used as coprocessors to the MC68020 and MC68030 MPUs; this manual assumes such connection. It is divided into main parts, the first providing a detailed description of the programmer's model and of each instruction, the second describing the hardware interface to the main processor, with bus cycle timing and register addressing information.

# POWERPC AND RISC

**MPC601UM/AD POWERPC 601 RISC MICROPROCESSOR USER'S MANUAL** This manual's primary objective is to define the functionality of the MPC601 microprocessor for use by software and hardware developers. The MPC601 processor is the first in the family of PowerPC™ microprocessors, and can provide a reliable foundation for developing products compatible with subsequent processors in the PowerPC family. However, the MPC601 provides a bridge between the POWER architecture and the PowerPC architecture. Therefore, the secondary objective of this manual is to describe how the MPC601 processor differs from the PowerPC architecture.

**MPC603UM/AD POWERPC 603** The primary objective of this user's manual is to define the functionality of the Power PC 603™ microprocessor for use by software and hardware developers. The 603 is the second microprocessor in the Power PC™ family. Unlike the Power PC 601™ microprocessor, which provided a bridge between the Power Architecture™ and Power PC Architecture™ by incorporating aspects of both, the 603 only implements the 32-bit portion of the Power PC architecture.

# POWERPC AND RISC

**MPC604/D POWERPC ADVANCE INFORMATION** This document provides an overview of the Power PC 604™ microprocessor. It includes the following:

An overview of 604 features
Details about the 604 hardware implementation. This includes descriptions of the 604's execution units, cache implementation, memory management units (MMUs), and a system interface.

A description of the 604 execution model. This section includes information about the programming model, instruction set, exception model, and instruction timing.

**MC88100UM/AD MC88100 RISC MICROPROCESSOR USER'S MANUAL** The MC88100 is the first processor in the M88000 family of Reduced Instruction Set Computing (RISC) MPUs; it uses only simple instructions with extremely fast execution times to achieve very high efficiency and throughout. This manual provides an overview of its features and architecture; details of the programming model, addressing modes and instruction set; and descriptions of bus operation, exception processing, and instruction timing. Electrical and mechanical data and signal descriptions are included. Application information includes discussion of a minimum system configuration.

**MC88100UM/AD MC88100 SECOND GENERATION RISC MICROPROCESSOR USER'S MANUAL** The MC88100 is a Symmetric Superscalar machine capable of issuing and retiring two instructions per clock without any special alignment, ordering, or type restrictions on the instruction stream. This manual describes the programming, addressing modes, instruction set, implementation of point and graphics unit, caches, MMU, timing considerations, and system hardware design.

**MC88200UM/AD MC88200 CACHE/MEMORY MANAGEMENT UNIT USER'S MANUAL** The MC88200 is a high-performance, HCMOS VLSI device combining demand-paged virtual memory with 16K bytes of on-chip cache memory. It is specifically designed to operate with the MC88100 RISC processor. Separate chapters provide full details of the memory management functions and cache operation, and are followed by descriptions of the signals, bus operation, timing and registers. Forty-eight pages of application information discuss the use of multiple MC88200s, memory bus connections, and power and ground considerations. Contains electrical characteristics and mechanical data.

# DSP FAMILY

**DSP56KFAMUM/AD DIGITAL SIGNAL PROCESSOR FAMILY MANUAL** The DSP56K modular series of 24-bit general purpose Digital Signal Processors ((DSP's)) features a central processing unit (CPU) that is common to the various modular series members, such as the DSP56002 and the DSP56004. The DSP56000 and he DSP56001 are not based on the modular architecture and should not be used with thus manual. This manual describes the DSP56K modular series' CPU and instruction set. It is intended to be used with a modular device's User's Manual, such as the DSP56002 User's Manual. Introduces general DSP theory and discusses the features and benefits of the Motorola DSP56K family of 24-bit processors.

**DSP56000UM/AD DSP56000/DSP56001 DIGITAL SIGNAL PROCESSOR USER'S MANUAL** Digital Signal Processing is the arithmetic processing of real-time signals sampled and digitized at regular intervals. Motorola's DSP56000 and DSP56001 programmable CMOS DSPs are optimized to execute algorithms in as few operations as possible while maintaining a high degree of accuracy. The architecture is designed to maximize throughput in data-intensive applications. This book provides full functional and programming information, including instruction set details arranged in mnemonic order, allowing the user to design DSP-based systems and to code DSP and data manipulation algorithms.

# DSP FAMILY

**DSP56002UM/AD** This manual describes the DSP56002 24-bit digital signal processor, its memory and operating modes, and its peripheral modules. It is intended to be used with the DSP56K Central Processing Manual (DSP56KFA-MUM?AD), which describes the central processing unit, programming modules, and includes details of the instruction set. The DSP56002 Technical Data Sheet (DSP56002/D) provides timing, pinout, and packaging descriptions.

**DSP56004UM/AD DSP56004 DIGITAL SIGNAL PROCESSOR USER'S MANUAL** This manual describes the DSP56004 24-bit digital signal processor, its memory and operating modes, and its peripheral modules. It is intended to be used with either the DSP56K Central Processing Unit Manual (DSP56KFAMUM/AD) or the DSP56000 Digital Signal Processor Family Manual (DSP56KFAMUM/AD); both describe the central processing unit, programming models and the instruction set. The Central Processing Unit Manual is simply a renamed Family Manual. This manual refers to the Central Processing Unit Manual, which can be used interchangeably with the Family Manual.

**DSP56166UM/AD DSP56166 USER'S MANUAL** This manual is intended to be used with the DSP56100 Family Manual. The DSP5600 Family Manual provides a description of the components of the DSP5616 core that are common to all DSP56100 family processors and includes a detailed description of the basic DSP56100 family instruction set. The DSP56166 User's manual provides a brief overview of the core processor and a detailed description of the memory and peripheries that are specific to the DSP56166.

# DSP FAMILY

**DSP56100FM/AD FAMILY MANUAL** The DSP56100 Family Manual provides a description of the components that are common to all DSP56100 family processors and includes a detailed description of the basic DSP56100 family instruction set.

**DSP96002UM/AD DSP96002 IEEE FLOATING-POINT DUAL-PORT PROCESSOR USER'S MANUAL** This manual describes the first member of Motorola's family of dual-port IEEE floating-point CMOS Digital Signal Processors. Topics covered include signal descriptions, bus operation, chip and software architecture, data organization, addressing modes, the instruction set, expansion ports and I/O peripherals, exception processing, operating modes, memory maps and the OnCE™ on-chip emulator. Full details of each instruction are provided one per page in alphabetic order of mnemonic; appendices provide 204 pages of standard benchmarks and describe the handling of IEEE floating-point arithmetic by the DSP960002.

# NOTE

Application notes for the DSP Family of Processors are found in the BR135/D as APRs.

APRs are application documents relating specifically to Digital Signal Processing.

# TEXTBOOKS

**(Available from Motorola Literature Center)**

**TB301/D BASIC MICROPROCESSORS AND THE 6800, Ron Bishop, Jugernut Publishing**

A basic introduction to microprocessors written in 1979 and based around the M6800 family.

**TB303/D USING MICROPROCESSORS AND MICROCOMPUTERS: THE 6800 FAMILY, Joseph Greenfield & William Wray, Prentice Hall**

Whether you're an engineer or a technician this book will show you how to assume responsibility for a complete real-time microcomputer project — from start to finish — including debugging of both the hardware and software.

**TB304/D PASCAL PROGRAMMING STRUCTURES FOR MOTOROLA MICROPROCESSORS, George W. Cherry RESTON PUBLISHING CO.**

Written in a unique conversational style, this text takes you by the hand and teaches you the complete Pascal programming language.

**TB309/D PROGRAMMING THE 6809, Rodnay Zaks & William Labiak, SYBEX**

Describes the organization and instruction set of the MC6809, presents the basic elements of assembly language programming, and introduces essential elementary and intermediate programming techniques.

**TB312/D INTRODUCTION TO INTEGRATED CIRCUIT LAYOUT, Brian Spinks, Prentice Hall**

If you're new to IC layout, this textbook-style guide will lead you through the basic MOS IC theory and into the design rules and cell planning.

# TEXTBOOKS

**TB313/D EFFICIENT C, Thomas Plum & Jim Brodie, Plum Hall Inc.**

C programs can be both portable and efficient when properly written. This book shows how to estimate the CPU time and space required for a specific algorithm, how to implement the algorithm in a manner most likely to be efficient, and how to measure the resulting performance.

**TB316/D TB316LM/D SINGLE- AND MULTI-CHIP MCU INTERFACING, G. J. Lipovski, Prentice Hall**

Aims to teach the principles of microcomputer system design in general and of interfacing in particular, adopting a combined hardware/software approach.

**TB317/D 68000, 68010, 68020 PRIMER, Stan Kelly-Bootle & Bob Fowler, DC HEATH AND CO.**

A comprehensive but very readable handbook for the M68000 family instruction set.

**TB318/D MICROPROCESSOR SYSTEMS DESIGN: 68000 HARDWARE, SOFTWARE AND INTERFACING, Alan Clements, PWS-KENT**

Provides a thorough grounding in the practical design of microprocessor systems based on Motorola's M68000.

**TB319/D MC68000 ASSEMBLY LANGUAGE AND SYSTEMS PROGRAMMING, William Ford & William Topp, D. C. Heath**

A very comprehensive hardback manual covering all aspects of assembly language programming on the MC68000 with discussion of additional instructions up to the MC68020.

# TEXTBOOKS

**TB320/D THE 68000 FAMILY, VOLUME 1: ARCHITECTURE, ADDRESSING MODES AND INSTRUCTION SET, Werner Hilf & Anton Nausch, Prentice Hall**

Volume 1 of this substantial 2-volume hardback set provides a detailed overview of the M68000 family, including a history of microprocessors showing M68000 in perspective; explanation of the family architecture; discussion of basic concepts such as registers, data formats, exceptions, interrupts, timing, etc.; a description of the addressing modes; and an individual description of each instruction.

**TB321/D PRACTICAL SWITCHING POWER SUPPLY DESIGN, Marty Brown, Academic Press Inc.**

Rather than present lengthy theoretical analysis, this book aims to convey an intuitive understanding of the operation of switching power supplies.

**TB322/D THE 68000 FAMILY, VOLUME 2: APPLICATIONS AND THE M68000 DEVICES, Werner Hilf & Anton Nausch, Prentice Hall**

Volume 2 builds upon the industry foundation laid by the first volume and continues the in-depth coverage of the fundamentals and the architecture of the M68000 family.

**TB323/D THE 68000 BOOK, Bob Southern, Southcroft Publishing**

An introductory text on the architecture, assembly language programming and interfacing of the M68000 family of MPUs and peripherals.

# TEXTBOOKS

**TB324/D REAL TIME DIGITAL SIGNAL PROCESSING APPLICATIONS WITH MOTOROLA'S DSP56000 FAMILY, Mohamed El-Sharkawy, Prentice Hall**

Explains and demonstrates the operation of Motorola's DSP56000 family of digital signal processors and peripherals and its DSP56000 application development tools.

**TB325/D MOTOROLA MC68332 MICROCONTROLLER, Thomas L. Harman, Prentice Hall**

Familiarizing readers with the procedures necessary to design and develop hardware and software for applications, author Thomas L. Harman provides a comprehensive introduction to all of the significant aspects of design using the MC68332.

**TB326/D RADIO FREQUENCY TRANSISTORS — PRINCIPLES AND PRACTICAL APPLICATIONS, Norm Dye and Helge Granberg, BUTTERWORTH-HEINEMANN**

This book presents a summary of RF transistor characteristics and their applications in RF amplifiers, both non-linear high power and linear low power.

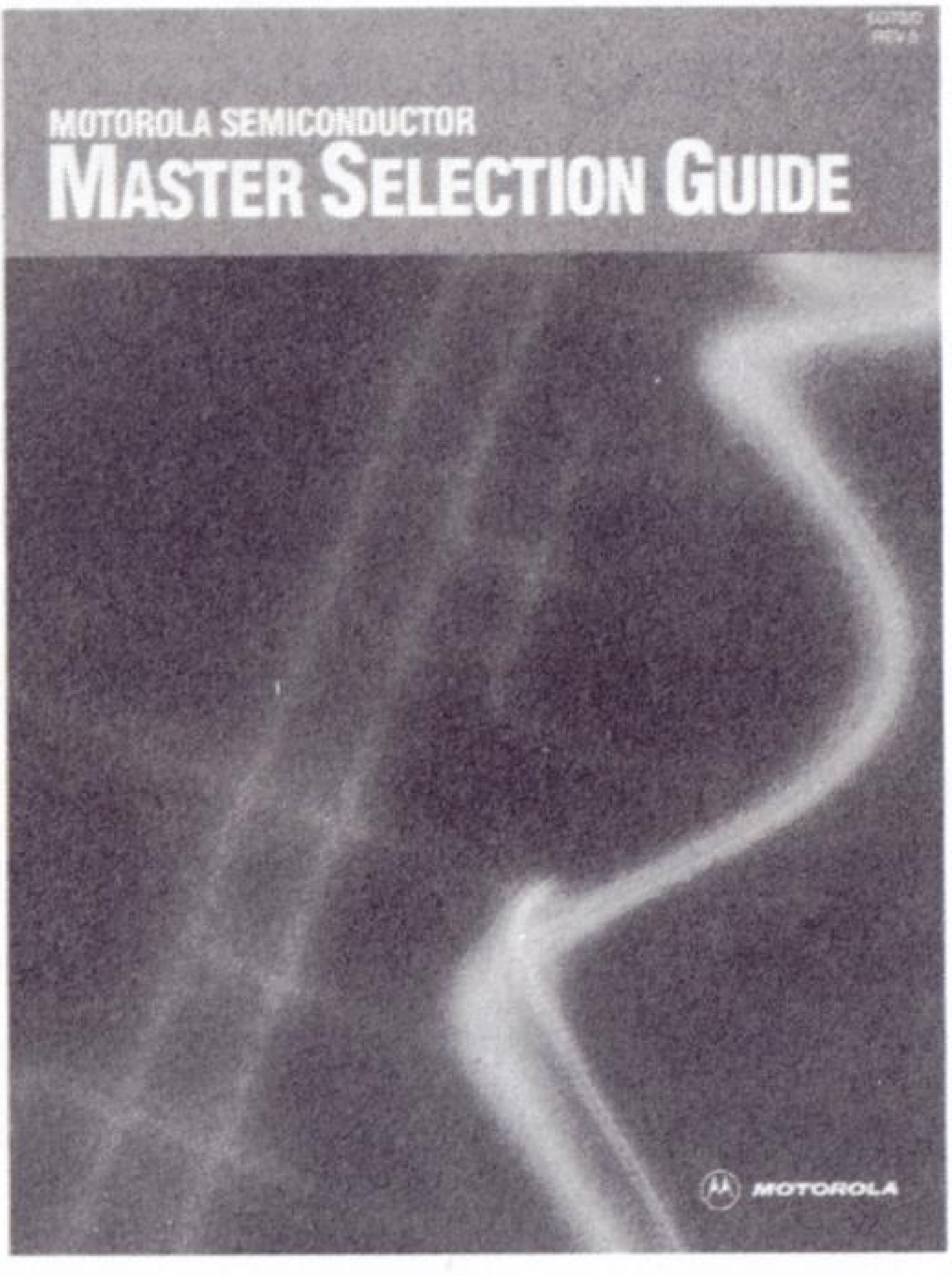
**TB327/D USING SMALL MICROCONTROLLERS, James M. Sibigtroth, Prentice Hall**

This test is a guide to the world of microcontrollers. It is an aid to understanding the inner workings of these small general-purpose computers and goes on to explain how to design microcontrollers into useful applications.

# MASTER SELECTION GUIDE SG73/D

For the design engineer of educator, the Motorola Master Selection Guide is perhaps the most important single document for the identification and preliminary selection of components for circuit and system designs. Within its pages are a complete listing and description of semiconductor devices currently in general use, and those recommended for new design. It serves two purposes:

1. It lists all standard products in the vast Motorola semiconductor inventory for rapid identification.
2. It devides the total offering into a variety of major product categories, with sufficient technical information to permit an intelligent first order evaluation as to the most suitable device for a specific application.



**DK304/D — DOS 3.5 MOTOROLA DATA DISK — SPECS IN SECS** Selection of Motorola semiconductors is now as quick as your desktop computer. This resource is an engineering tool which speeds device selection. It provides you at-the-desk access to computerized device selection for over 13,000 Motorola devices in 124 product categories. It also contains cross-references to 25,000 competitive devices and is available in IBM format.

The Motorola Data Disk is designed to assist in the selection of Motorola semiconductor devices by providing the following capabilities:

1. Perform a parametric search and display the most important parameters in rank order
2. Park number search
3. Partial part number search
4. The ability to limit searches to Surface Mount devices only
5. The ability to limit searches to Military devices only
6. Cross-reference searches to similar and direct replacements
7. Phone number listing for Motorola's sales office and distributors
8. Provides pricing information
9. The ability to print displayed screens
10. Automatic multilevel sorts
11. Footnotes support
12. The ability to print an information request form to obtain specific technical literature or application assistance
13. Complete literature support for all devices including application notes, article reprints, engineering bulletins and data books

**DK107 IMPEDANCE MATCHING PROGRAM** This 5-1/4" IBM compatible disk contains a specialized form of CAD specifically developed for RF power amplifier circuit design. Its data base contains input and output impedance for most of MOTOROLA'S RF power transistors and allows the user to match the impedance manually by means of a variety of matching elements. The impedance and the results of the matching elements are displayed on a SMITH® Chart plot that allows the user to see graphically what effects are created by his/her choice of matching components.

# BOOK LIST & PRICES

| **MOTOROLA ORDER NUMBER** | | **UNIVERSITY PRICE** | **BOOK PRICE** | **DESCRIPTION** |
|---|---|---|---|---|
| **DATA BOOKS** | | | | |
| DL110/D | | 10.20 | 13.75 | RF DEVICE DATA (2 VOL. set) |
| DL111/D | | 3.70 | 5.00 | BIPOLAR POWER TRANSISTORS |
| DL118/D | | 2.15 | 2.90 | OPTOELECTRONIC DEVICE DATA |
| DL121/D | | 2.30 | 3.10 | FAST & LS TTL DEVICE DATA |
| DL122/D | | 2.40 | 3.25 | MECL DEVICE DATA |
| DL126/D | | 3.50 | 4.75 | SMALL-SIGNAL TRANS./FET'S DATA |
| DL128/D | | 10.50 | 14.00 | LINEAR & INTERFACE IC'S (2 VOL. set) |
| DL129/D | | 2.40 | 3.25 | HIGH SPEED CMOS |
| DL130/D | | 2.15 | 2.90 | CMOS APPLICATION-SPECIFIC |
| DL131/D | | 2.15 | 2.90 | CMOS LOGIC DEVICE DATA |
| DL135/D | | 2.95 | 4.00 | POWER MOSFET TRANSISTOR |
| DL136/D | | 3.10 | 4.20 | COMMUNICATION DEVICE DATA |
| DL137/D | | 2.80 | 3.80 | THYRISTOR DEVICE DATA |
| DL138/D | | 1.85 | 2.50 | FACT DEVICE DATA |
| DL140/D | | 2.30 | 3.10 | ECLINPS DEVICE DATA |
| DL144/D | | 1.40 | 1.90 | COMMERCIAL PLUS & MILL/AERO |
| DL145/D | | 2.25 | 3.05 | MILITARY MECL FAMILY DATA |
| DL148/D | | 2.60 | 3.50 | DISCRETE MILITARY DATA |
| DL150/D | | 1.65 | 2.25 | ZENER DIODE DATA |
| DL151/D | | 2.60 | 3.50 | RECTIFIER DATA BOOK |
| DL152/D | | 1.25 | 1.70 | MDA15 CMOS STANDARD CELL |
| DL154/D | | 1.15 | 1.55 | MDA08 CMOS STANDARD CELL |
| DL155/D | | 4.50 | 6.30 | DRAM MEMORY DEVICE DATA |
| DL156/D | | 0.35 | 4.50 | FSRAM MEMORY DEVICE DATA |
| DL200/D | | 2.40 | 3.35 | SENSOR DEVICE DATA |
| **APPLICATION MANUAL** | | | | |
| DL408/D | | 10.60 | 14.85 | 8-bit MCU Applications Manual |
| DL409/D | | 10.60 | 14.85 | 16/32-bit Applications Manual |
| DL410/D | | 10.60 | 14.85 | Power Applications Manual |
| DL411/D | | 10.60 | 14.85 | Communications Application Manual |
| DL412/D | | 10.60 | 14.85 | Industrial Control Application Manual |
| DL413/D | | 10.60 | 14.85 | Radio, RF, & Video Applications |
| DL414/D | | 8.65 | 12.10 | FET Application Manua |
| BR135/D | | 0.20 | 0.20 | APPLICATION NOTE CATALOG |
| **HC05 MANUALS** | | | | |
| M6805UM/AD3 | | 2.00 | 2.70 | M6805 HMOS M146805 CMOS |
| M68HC05AG/AD | | 1.65 | 2.25 | HC05 APPLICATIONS GUIDE |
| M68HC05TB/D | | 2.50 | 3.40 | UNDERSTANDING SMALL MICRO's |
| CPUO8RM/AD | | 1.40 | 1.95 | HC08 CPU REF. Mnual |
| MC68HC05CxRG/AD | | 0.75 | 0.75 | HC05CX PROGRAMMING |
| GUIDEM68HC08RG/AD | | 1.00 | 1.00 | MC68HC08 PROGRAMMING GUIDE |

# BOOK LIST & PRICES

| MOTOROLA ORDER NUMBER | | UNIVERSITY PRICE | BOOK PRICE | DESCRIPTION |
|---|---|---|---|---|
| **HC05 MANUALS** | | | | |
| MC68HC05A6/D | | 0.15 | 0.15 | MC68HC05A6 DATA BOOK |
| MC68HC05B6/D | | 2.00 | 2.00 | MC68HC05B6 DATA BOOK |
| MC68HC05C4/D | | 0.80 | 1.00 | MC68HC05C4 DATA BOOK |
| MC68HC05C9/D | | 2.50 | 3.75 | MC68HC05C9 DATA BOOK |
| MC68HC05E0/D | | 0.30 | 0.30 | MC68HC05E0 DATA BOOK |
| MC68HC05F5/D | | 1.35 | 1.35 | MC68HC05F5 DATA BOOK |
| MC68HC05J1/D | | 1.45 | 1.75 | MC68HC05J1 DATA BOOK |
| MC68HC05J1A/D | | 3.00 | 3.75 | MC68HC05J1A DATA BOOK |
| MC68HC05K1/D | | 0.30 | 0.30 | MC68HC05K1 DATA BOOK |
| MC68HC05L2/D | | 0.35 | 0.35 | MC68HC05L2 DATA BOOK |
| MC68HC05L6/D | | 0.80 | 1.00 | MC68HC05L6 DATA BOOK |
| MC68HC05P1/D | | 0.15 | 0.15 | MC68HC05P1 DATA BOOK |
| MC68HC05P4/D | | 0.70 | 0.90 | MC68HC05P4 DATA BOOK |
| MC68HC05P7/D | | 0.15 | 0.15 | MC68HC05P7 DATA BOOK |
| MC68HC05P8/D | | 0.70 | 0.90 | MC68HC05P8 DATA BOOK |
| MC6805S2/D | | 0.80 | 1.00 | MC6805S2,S3 DATA BOOK |
| MC68HC05X4/D | | 0.45 | 0.45 | MC68HC05X4 DATA BOOK |
| MC68HC705C8/D | | 0.70 | 0.90 | MC68HC705C8 DATA BOOK |
| MC68HC705H2/D | | 1.35 | 1.35 | MC68HC705H2 DATA BOOK |
| MC68HC705J2/D | | 0.15 | 0.15 | MC68HC705J2 DATA BOOK |
| MC68HC705K1/D | | 1.00 | 1.00 | MC68HC705K1 DATA BOOK |
| MC68HC705P6/D | | 2.50 | 3.75 | MC68HC705P6 DATA BOOK |
| MC68HC705P9/D | | 0.15 | 0.15 | MC68705P9 DATA BOOK |
| MC68/7/05P/D | | 0.80 | 1.00 | MC68705P DATA BOOK |
| MC68/7/05R-U/D | | 0.80 | 1.00 | MC68705R &U SERIES DATA BOOK |
| MCUDEVTLDIR/D | * | 1.25 | 1.25 | DEVELOPMENT TOOL DIRECTORY |
| M68HC05EVM/AD4 | | 3.30 | 4.45 | HC05EVM UM |
| M68HC05P8EVS/D1 | | 3.75 | 5.00 | HC05EVS EVALUATION SYS UM |
| M68HC05P9EVS/D1 | | 3.75 | 5.00 | M68HC05P9EVS UM |
| M68HC05PGMR/AD1 | | 5.50 | 7.45 | 05A6P1, 705C8 & 805CH PROGRAM |
| M68HC05PGMR2/D1 | | 1.10 | 1.60 | PROGRAMMER BOARD UM #2 |
| M68701EVM/AD3 | | 5.65 | 7.65 | M68701EVM UM |
| M68705EVM/AD5 | | 5.85 | 7.90 | M68705EVM UM |
| BR1111/D | * | 0.15 | 0.15 | M68HC705J2/P9PGMR BOARD MAN. |
| BR1112/D | * | 0.40 | 0.40 | HC05 (CSIC) & (MCU)-(REV 1) |
| BR529/D | * | 0.15 | 0.15 | MC146805G2 TECH SUM |
| BR713/D | * | 0.15 | 0.15 | MC68HC05M4 TECH SUM |
| BR757/D | * | 0.15 | 0.15 | MC68HC05P1 TECH SUM |
| BR728/D | * | 2.27 | 2.27 | CSIC MICONTROLLERS |
| BR743/D | * | 0.15 | 0.15 | MC68HC05P7 TECH SUM |
| BR744/D | * | 0.15 | 0.15 | MC68HC05P4 TECH SUM |

# BOOK LIST & PRICES

| MOTOROLA ORDER NUMBER | | UNIVERSITY PRICE | BOOK PRICE | DESCRIPTION |
|---|---|---|---|---|
| **HC05 MANUALS** | | | | |
| BR764/D | * | 0.35 | 0.35 | CSIC PORTFOLIO OF EXISTING PARTS |
| BR765/D | * | 0.15 | 0.15 | MC68HC705P9 TECH SUM |
| BR766/D | * | 0.15 | 0.15 | MC68HC05P9 TECH SUM |
| BR767/D | * | 0.15 | 0.15 | MC68HC05C5 TECH SUM |
| BR768/D | * | 0.15 | 0.15 | MC68HC05J1 TECH SUM |
| BR769/D | * | 0.15 | 0.15 | MC68HC705J2 TECH SUM |
| BR769AD/D | * | 0.15 | 0.15 | MC68HC705J2 TECH SUM |
| BR770/D | * | 0.15 | 0.15 | MC68HC05T1 TECH SUM |
| BR771/D | * | 0.15 | 0.15 | MC68HC05T2 TECH SUM |
| BR772/D | * | 0.15 | 0.15 | MC68HC05E1 TECH SUM |
| BR773/D | * | 0.15 | 0.15 | MC6805R6 TECH SUM |
| BR760/D | * | 0.15 | 0.15 | MC68HC05C9 TECH SUM |
| BR750/D | * | 0.15 | 0.15 | MC68HC05P8 TECH SUM |
| **HC11 MANUALS** | | | | |
| M68HC11RM/AD | | 1.95 | 2.65 | HC11 REF. MANUAL |
| MC68HC11A8/D | | 0.80 | 1.00 | MC68HC11A8 DATA BOOK |
| MC68HC11D3/D | | 0.15 | 0.15 | MC68HC11D3 DATA BOOK |
| MC68HC11E/D | | 0.15 | 0.15 | HC11 E FAMILY DATA BOOK |
| MC68HC11E9TS/D | | 2.75 | 3.75 | MC68HC11E9 TECH SUMMARY |
| MC68HC11E20/D | | 0.45 | 0.45 | MC68HC11E20 DATA SHEET |
| MC68HC11E20TS/D | | 1.00 | 1.00 | HC11E20 TECH SUMMARY |
| MC68HC11F1/D | | 0.90 | 1.00 | MC68HC11F1 DATA BOOK |
| MC68HC11G5/D | | 0.80 | 1.00 | MC68HC11G SERIES DATA BOOK |
| MC68HC11K4/D | | 2.75 | 3.75 | MC68HC11K4 DATA BOOK |
| MC68HC11KA4TS/D | | 0.30 | 0.30 | MC68HC11KA4 DATA BOOK |
| MC68HC11L6/D | | 1.00 | 1.00 | MC68HC11L6 DATA BOOK |
| MC68HC11N/D | | 2.50 | 3.75 | MC68HC11N DATA BOOK |
| MC68HC11N4TS/D | | 0.75 | 0.75 | MC68HC11N4 DATA BOOK |
| MC68HC711D3/D | | 0.15 | 0.15 | MC68HC711D3 DATA BOOK |
| MC68HC711E9/D | | 0.15 | 0.15 | MC68HC711E9 DATA BOOK |
| MC68HC711L6/D | | 0.15 | 0.15 | MC68HC711L6 DATA BOOK |
| MC68HC711N4TS/D | | 0.75 | 0.75 | MC68HC711N4 TECH SUMMARY |
| MC68HC811E2/D | | 0.15 | 0.15 | MC68HC811E2 DATA BOOK |
| MC68HC11A8RG/AD | | 0.38 | 1.40 | HC11A8 PROGRAM REF. GUIDE |
| MC68HC11D3RG/AD | | 0.38 | 0.40 | HC11D3/711D3 REF.GUIDE |
| MC68HC11ERG/AD | | 1.00 | 1.00 | HC11E FAMILY PROGRAM REF. GUIDE |
| MC68HC11F1RG/AD | | 0.55 | 1.75 | HC11F1 PROGRAM REF GUIDE |
| MC68HC11K4RG/D | | 0.75 | 0.75 | HC11K4 PROGRAM REF. GUIDE |
| MC68HC11KA4RG/AD | | 0.75 | 0.75 | HC11KA4 PROGRAM REF. GUIDE |
| MC68HC11L6RG/AD | | 0.30 | 0.30 | HC11L6 PROGRAM REF. GUIDE |
| MC68HC11MRG/AD | | 1.00 | 1.00 | HC11M SERIES PROGRAM REF GUIDE |

# BOOK LIST & PRICES

| MOTOROLA ORDER NUMBER | | UNIVERSITY PRICE | BOOK PRICE | DESCRIPTION |
|---|---|---|---|---|
| **HC11 MANUALS** | | | | |
| MC68HC11NRG/AD | | 1.75 | 1.75 | HC11N PROGRAM REF. GUIDE |
| HC711D3EVB/AD1 | * | 5.90 | 8.00 | M68HC711D3EVB UM |
| HC711D3PGMR/AD1 | * | 1.80 | 2.45 | M68HC711D3PGMR UM |
| HC711E9PGMR/AD1 | * | 1.65 | 2.25 | M68HC711E9PGMR PROG BD MNL |
| M68HC11EVB/D1 | * | 2.70 | 3.65 | HC11EVB EVALUATION BD UM |
| M68HC11EVBU/AD2 | * | 5.00 | 6.75 | HC11EVBU EVALUATION BD UM |
| M68HC11EVB2/AD1 | | 7.50 | 15.00 | M68HC11EVB2 EVAL BOARD UM |
| M68HC11EVBUAG/D | | 7.00 | 7.00 | HC11 APPLICATIONS GUIDE |
| M68HC11EVM/AD7 | * | 3.20 | 4.75 | M68HC11EVM UM |
| M68HC11F1EVM/D1 | * | 5.50 | 7.40 | M68HC11F1 EVM UM |
| BUGATECH/AD1 | | 8.25 | 16.50 | BUFFALO MONITOR PROG. LISTING |
| M68PCBUG11/D2 | | 2.75 | 3.75 | MC68HC11 PC BUG11 UM |
| M68FCASS/AD1 | * | 1.10 | 1.65 | FREEWARE PC-COMP 8-BIT C A UM |
| MCUDEVTLDIR/D | * | 1.25 | 1.25 | DEVELOPMENT TOOLS DIRECTORY |
| BR774/D | * | 0.15 | 0.15 | MC68HC11L6 TECH SUM |
| BR775/D | * | 0.15 | 0.15 | MC68HC711E9 TECH SUM |
| BR776/D | * | 0.15 | 0.15 | MC68HC11K4 TECH SUM |
| BR777/D | * | 0.15 | 0.15 | MC68HC11D0, D3 TECH SUM |
| BR586/D | * | 0.15 | 0.15 | MC68HC811E2 TECH SUM |
| BR778/D | * | 0.15 | 0.15 | MC68HC711D3 TECH SUM |
| BR780/D | * | 0.15 | 0.15 | MC68HC811E2 TECH SUM |
| BR781/D | * | 0.15 | 0.15 | MC68HC11F1 TECH SUM |
| BR782/D | * | 0.15 | 0.15 | MC68HC711J6 TECH SUM |
| BR289/D | * | 0.15 | 0.15 | MC68HC811A2 TECH SUM |
| BR751/D | * | 0.15 | 0.15 | MC68HC711K4 TECH SUM |
| **HC16 MANUALS** | | | | |
| CPU16RM/AD | | 2.45 | 3.30 | HC16 FAM CPU REF. MANUAL |
| GPTRM/AD | | 0.50 | 1.70 | GENERAL PURPOSE TIMER RM |
| QSMRM/AD | | 1.65 | 2.20 | QUEUED SERIAL MODULE USER MAN. |
| SIMRM/AD | | 1.25 | 1.75 | SYSTEM INTEGRATION MODULE MAN. |
| TPURM/AD | | 1.40 | 1.90 | MC68332 TPU REF. MANUAL |
| MC68HC16Y1UM/AD | | 2.00 | 2.80 | HC16Y1 USER MANUAL |
| MC68HC16Z1UM/AD | | 1.75 | 2.40 | HC16Z1 USER MANUAL |
| MC68HC16Z2UM/AD | | 2.30 | 3.25 | HC16Z2 USER MANUAL |
| MC68HC16X1TS/D | | 0.35 | 0.35 | MC68HC16X1 TECH SUMMARY |
| MC68HC16Y1TS/D | | 1.35 | 1.35 | MC68HC16Y1 TECH SUMMARY |
| MC68HC16Z1TS/D | | 1.35 | 1.35 | MC68HC16Z1 TECH SUMMARY |
| MC68HC16Z2TS/D | | 0.40 | 0.40 | MC68HC16Z2 TECH SUMMARY |
| M68HC16Z1EVB/D1 | | 2.75 | 3.75 | HC16Z1EVB UM (INC IASM16) |
| MCUDEVTLDIR/D | * | 1.25 | 1.25 | DEVELOPMENT TOOLS DIRECTORY |

# BOOK LIST & PRICES

| MOTOROLA ORDER NUMBER | | UNIVERSITY PRICE | BOOK PRICE | DESCRIPTION |
|---|---|---|---|---|
| **68300 FAMILY** | | | | |
| CPU32RM/AD | | 2.42 | 3.25 | 68332 CPU REF. MANUAL |
| MCCIRM/AD | | 1.25 | 1.25 | MODULAR MICRO's FAMILY REF MANUAL |
| SCIMRM/AD | | 1.50 | 2.10 | SINGLE CHIP INTEGRATION REF MAN. |
| MC68302/D | * | 0.15 | 0.15 | MC68302 DATA SHEET |
| MC68302UM/AD | | 2.25 | 3.40 | MC68302 USERS MANUAL |
| MC68306UM/AD | | 1.30 | 1.75 | INTEGRATED EC000 USER MANUAL |
| MC68330UM/AD | | 1.05 | 1.40 | MC68330 USER MANUAL |
| MC68331UM/AD | | 2.10 | 2.85 | MC68331 USER MANUA |
| LMC68331TS/D | | 0.15 | 0.15 | MC68331 DATA BOOK |
| MC68332UM/AD | | 1.50 | 2.05 | MC68332 USERS MANUAL |
| MC68332TS/D | | 1.50 | 1.50 | MC68332 DATA BOOK |
| MC68F333UM/AD | | 1.60 | 2.15 | MC68F333 USER MANUAL |
| MC68F333TS/D | | 0.30 | 0.30 | MC68F333 DATA BOOK |
| MC68341UM/AD | | 2.00 | 2.70 | MC68341 USER MANUAL |
| MC68349UM/AD | | 2.00 | 2.70 | MC68349 USER MANUAL |
| M68300EVS/AD1 | | 2.75 | 3.75 | M68300EVS UM |
| M68331EVK/AD1 | | 5.50 | 7.45 | M68331EVK EVALUATION KIT UM |
| M68332EVK/AD1 | | 4.60 | 6.25 | M68332EVK EVALUATION KIT UM |
| M68332EVKEM/AD1 | | 1.40 | 1.90 | M68332 EVAL KIT EXERCISE MAN |
| M68CPU32BUG/AD1 | | 6.30 | 8.50 | CPU32 BUG DEBUG MONITOR UM |
| BR1114/D | * | 0.25 | 0.25 | 68300 INTERGRATED MCU FAMILY |
| BR756/D | * | 0.60 | 0.60 | MC68332 TECH SUM (REV 1) |
| **68000 FAMILY** | | | | |
| M68000FR/AD | | 4.10 | 5.55 | 68000 FAMILY REF. MAN. |
| M68000PM/AD | | 2.75 | 3.70 | 68000 FAMILY PROGRAMMERS M. |
| M68000UM/AD | | 1.45 | 1.95 | 68000 USERS MANUAL |
| M68020UM/AD | | 1.55 | 2.10 | MC68020 USERS MANUAL |
| MC68030UM/AD | | 2.65 | 3.50 | MC68030 USERS MANUAL |
| MC68040DH/AD | | 10.20 | 13.75 | 040 DESIGNERS HANDBOOK |
| M68040UM/AD | | 2.30 | 3.10 | MC68040 USERS MANUAL |
| M68060UM/AD | | 2.10 | 2.85 | MC68060 USER MANUAL |
| MC68060/D | | 0.35 | 0.35 | MC68060 DATA SHEET |
| MC68153/D | | 0.15 | 0.15 | MC68153 BUS INTERRUPTER MOD |
| MC68230/D | | 0.80 | 1.00 | MC68230 DATA BOOK |
| MC68340/D | * | 0.15 | 0.15 | MC68340 DATA BOOK |
| MC68340UM/AD | | 3.95 | 5.35 | MC68340 USERS MANUAL |
| MC68360UM/AD | | 3.40 | 4.75 | QUAD INTEGRATED COMM. CONTROLLER |
| MC68440/D | | 0.80 | 1.00 | MC68440 DATA BOOK |
| MC68450/D | | 0.80 | 1.00 | MC68450 DATA BOOK |
| MC68451/D | | 1.45 | 1.75 | MC68451 DATA BOOK |
| MC68452/D | * | 0.15 | 0.15 | 68452 BUS ARBITRATION MODULE |

# BOOK LIST & PRICES

| MOTOROLA ORDER NUMBER | | UNIVERSITY PRICE | BOOK PRICE | DESCRIPTION |
|---|---|---|---|---|
| **68000 FAMILY** | | | | |
| MC68605UM/AD | | 1.55 | 2.10 | X.25 PROTOCOL CONTROLLER |
| MC68606UM/AD | | 1.70 | 2.30 | MC68606 USERS MANUAL |
| MC68681/D | | 1.35 | 1.35 | MC68681 DATA BOOK |
| MC68824/D | | 0.15 | 0.15 | MC68824 DATA BOOK |
| MC68824UM/AD | | 1.60 | 2.15 | MC68824 USER MANUAL |
| MC68836UM/AD | | 0.75 | 1.00 | 68836 FIBER DISTRIB. DATA INTERF. |
| MC68837UM/AD | | 1.50 | 2.00 | FDDI USER MANUAL 68837 |
| MC68838UM/AD | | 2.75 | 3.75 | FDDI USER MANUAL 68838 |
| MC68840UM/AD | | 1.90 | 2.55 | FDDI USER MANUAL 68840 IFDDI |
| MC68847UM/AD | | 1.40 | 1.90 | FDDI UM QUAD ELM |
| MC68851/D | | 0.15 | 0.15 | MC68851 DATA BOOK |
| MC68851UM/AD | | 6.05 | 8.15 | MC68851 USERS MANUAL |
| MC68881/D | | 0.15 | 0.15 | MC68881 DATA BOOK |
| MC68881UM/AD | | 2.95 | 4.00 | MC68881/82 USERS MANUAL |
| MC68901/D | | 0.80 | 1.00 | MC68901 DATA BOOK |
| BR729/D | | 2.35 | 3.20 | THE 68K SOURCE |
| BR1407/D | | 0.85 | 0.85 | 3.3 VOLT LOGIC INTERFACE |
| BR231/D | * | 0.15 | 0.15 | 68000 TECH LIT (REV 7 ) |
| BR251/D | * | 0.15 | 0.15 | MC68450 DMA CONTROLLER (REV 1) |
| BR259/D | * | 0.15 | 0.15 | MC68008 TECH SUM |
| BR263/D | * | 0.15 | 0.15 | MC68230 TECH SUM ( REV 1 ) |
| BR269/D | * | 0.15 | 0.15 | MC68010 TECH SUM |
| BR272/D | * | 0.15 | 0.15 | MC68605 PRELIM TECH SUM (REV 3) |
| BR509/D | * | 0.15 | 0.15 | MC68882 TECH SUM (REV 3) |
| BR520/D | * | 0.15 | 0.15 | MC68606 TECH SUM |
| BR1118/D | * | 0.15 | 0.15 | 68LC040 MPU |
| BR1119/D | * | 0.15 | 0.15 | 68EC040 MPU |
| BR286/D | * | 0.15 | 0.15 | MC68184 TECH SUM |
| BR299/D | * | 0.15 | 0.15 | MC68851 TECH SUM (REV 2) |
| BR733/D | * | 0.15 | 0.15 | 68040 MPU (REV 2) |
| BR742/D | * | 0.15 | 0.15 | 68000 FAM SURFACE MT PKG UPDATE |
| BR1109/D | * | 0.15 | 0.15 | MC68ECOxO MICROPRCR FAM |
| BR1115/D | * | 0.15 | 0.15 | 68000 MICROPROCESSOR FAMILY |
| BR752/D | * | 0.15 | 0.15 | MC68340 TECH SUM |
| BR753/D | * | 0.15 | 0.15 | M68340EVS TECH SUM |
| BR917/D | * | 3.55 | 3.55 | OUR 68000 LINE |
| **POWERPC & RISC** | | | | |
| MC88100UM/AD | | 3.60 | 4.85 | MC88100 RISC CPU USER MAN. |
| MC88110UM/AD | | 2.10 | 2.85 | MC88110 2ND GEN. RISC CPU MAN |
| MC88200UM/AD | | 3.60 | 4.85 | MC88200 CACHE/MEMORY MAN. |
| MC88410UM/AD | | 1.30 | 1.75 | SECONDARY CASHE CONTROLLER |
| MPC601/D | * | 0.35 | 0.35 | MPC601 DATA SHEET |

# BOOK LIST & PRICES

| MOTOROLA ORDER NUMBER | | UNIVERSITY PRICE | BOOK PRICE | DESCRIPTION |
|---|---|---|---|---|
| **POWERPC & RISC** | | | | |
| MPC601UM/AD | | 4.65 | 6.50 | MPC601 USER MANUAL |
| MPC603/D | * | 0.35 | 0.35 | MPC603 DATA SHEET |
| MPC603UM/AD | | 3.65 | 4.95 | MPC603 USER MANUAL |
| MPC604/D | * | 0.35 | 0.35 | MPC604 DATA SHEET |
| MPCTOOLBK/AD | | 4.50 | 4.50 | POWERPC DEVELOPMENT TOOLS |
| BR719/D | * | 0.15 | 0.15 | 88000 MARKET POTENTIAL STUDY |
| BR732/D | * | 0.15 | 0.15 | RISC MPU (REV1) |
| BR1117/D | * | 0.25 | 0.25 | 88100 RISC MPU PREVIEW |
| **DSP MANUALS** | | | | |
| DSP56KFAMUM/AD | | 2.40 | 3.25 | DSP56000 FAMILY REF. MANUAL |
| DSP56000UM/AD | | 4.50 | 6.00 | 56000/001 DSP USER MANUAL |
| DSP56002UM/AD | | 2.30 | 3.10 | 56002 DSP USER MANUAL |
| DSP56004UM/AD | | 2.35 | 4.70 | 56004 DSP USER MANUAL |
| DSP56100FM/AD | | 3.00 | 4.05 | DSP56100 FAMILY REFERENCE |
| DSP56156UM/AD | | 2.10 | 2.85 | DSP56156 USER MANUAL |
| DSP56166UM/D | | 2.65 | 3.70 | DSP56166 USER MANUAL |
| DSP96002UM/AD | | 4.40 | 6.00 | 96000 DSP USER MANUAL |
| BR382/D | * | 0.80 | 0.80 | UNIV SUPPORT FOR DSP56000 (REV 1) |
| BR282/D | * | 0.15 | 0.15 | DSP56000 TECH SUM (REV 1) |
| **OTHER MANUALS** | | | | |
| M68PRM/D | * | 5.00 | 7.00 | MC6800 PROGRAMERS MAN. |
| M6809PM/AD | * | 2.80 | 3.75 | MC6809 PROGRAMMERS MAN |
| HB205/D | | 2.00 | 2.70 | MECL SYS DESIGN HANDBOOK |
| HB213/D | | 1.20 | 2.00 | DISCRETE MILITARY OPERATION |
| HB214/D | | 3.00 | 4.20 | RECTIFIER HANDBOOK |
| HCA62A00/D | * | 0.15 | 0.15 | HCA62A00 SERIES DATA SHEET |
| HCA62A00DM/D | | 2.00 | 2.00 | MCA62A00 SERIES ARRAYS |
| HDC/D | * | 0.15 | 0.15 | HIGH DENSITY CMOS SERIES |
| HDCDM/D | | 2.25 | 3.35 | HDC SERIES CMOS ARRAYS |
| MCA3ETLDM/D | | 1.95 | 2.65 | MCA3 ETL SERIES DESIGN MANUAL |
| MC10902/D | * | 0.35 | 0.35 | MC10902 BINARY/BCD ALU |
| MC10904/D | * | 0.15 | 0.15 | MC10904 MICRO-CODE SEQUENCER |
| MC10905/D | * | 0.15 | 0.15 | MC10905 16-BIT EDAC |
| MC10951/D | * | 0.15 | 0.15 | MC10951 12X12 MULTIPLIER |
| MC145474/D | | 1.45 | 1.75 | MC145474 DATA SHEET |
| MC145488/D | | 1.45 | 1.75 | MC145488 DATA SHEET |
| MC6801L1UM/AD | * | 1.00 | .50 | LITTLEBUG MONITOR MANUAL |
| MC6801RM/AD2 | * | 6.05 | 8.15 | MC6801 REFERENCE MANUAL |
| MC6804J1/D | | 0.80 | 1.00 | MC6804J1,J2,P2 DATA SHEET |
| MC6840UM/AD1 | | 0.55 | 1.75 | MC6840 PROGRAMMABLE TIME |
| MC68488UM/AD | * | 5.05 | 6.80 | GENERAL PURPOSE INTERFACE |

# BOOK LIST & PRICES

| MOTOROLA ORDER NUMBER | | UNIVERSITY PRICE | BOOK PRICE | DESCRIPTION |
|---|---|---|---|---|
| **PRODUCT GUIDES** | | | | |
| SG114/D | * | 0.75 | 0.75 | EMS MODULES/ HIGH POWER |
| SG117/D | | 0.60 | 0.60 | DATA CONVERSION PRODUCTS (AD-DA) |
| SG122/D | * | 0.50 | 0.50 | FACT CMOS LOGIC |
| SG125/D | * | 1.15 | 1.15 | HIGH-SPEED 1400 SERIES |
| SG127/D | * | 2.25 | 2.25 | SURFACE MOUNT SELECT |
| SG131/D | * | 0.50 | 0.50 | FULL PAK POWER TRANS. |
| SG132/D | * | 1.30 | 1.30 | SMALL SIGNAL TRANS. |
| SG136/D | | 0.35 | 0.35 | RF SMALL-SIGNAL QUICK REF GUIDE |
| SG137/D | * | 0.65 | 0.65 | ICEPAK |
| SG138/D | * | 1.85 | 1.85 | MILITARY IC & DISCRETE |
| SG140/D | | 0.85 | 0.85 | SCANSWITCH HIGH RES MONITORS |
| SG160/D | | 1.20 | 1.20 | THYRISTORS PRODUCTS UPDATE |
| SG34/D | * | 0.90 | 1.90 | THYRISTOR |
| SG366/D | | 1.60 | 1.60 | TTL,ECL,CMOS & SPEC LOGIC CIRCUITS |
| SG44/D | * | 1.25 | 1.25 | RECTIFIER/ZENER |
| SG46/D | * | 2.15 | 2.15 | RF PRODUCTS |
| SG48/D | * | 1.45 | 1.45 | BIPOLAR POWER |
| SG56/D | * | 1.15 | 1.15 | TMOS POWER MOSFET |
| SG60/D | * | 0.45 | 0.45 | FAST & LS TTL |
| **SG73/D** | ***** | **4.00** | **5.40** | **MASTER SELECTOR GUIDE** |
| SG77/D | * | 1.15 | 1.15 | MECL PRODUCT |
| SG79/D | * | 2.25 | 2.25 | SWITCHMODE |
| SG87/D | * | 2.10 | 2.10 | OPTOELECTRONICS |
| SG96/D | * | 2.20 | 2.20 | LINEAR & INTERFACE IC |
| SG98/D | | 0.25 | 0.25 | LINEAR TELECOM X-REF (REV 4 ) |
| SG99/D | * | 0.45 | 1.50 | MOS APPLICATION SPECIFIC |
| **TEXT BOOKS** | | **(NO DONATION)** | | |
| TB301/D | N | 14.10 | 17.65 | BASIC MICRO & 6800 |
| TB303/D | N | 43.30 | 49.80 | USING MPU/MCU 6800 |
| TB304/D | N | 17.05 | 19.60 | PASCAL PROGRAM FOR MPU |
| TB309/D | N | 13.90 | 16.00 | PROGRAM THE 6809 |
| TB312/D | N | 26.35 | 32.95 | INTRO TO IC LAYOUT |
| TB313/D | N | 10.50 | 12.10 | EFFICIENT C |
| TB316/D | N | 30.35 | 34.90 | SNGL&MULT CHP UC INT. |
| TB316LM/D | N | 11.05 | 12.70 | SINGLE & MULTIPLE CHIP |
| TB317/D | N | 11.60 | 13.35 | 68000,68010,68020 PRIMER |
| TB318/D | N | 44.00 | 50.60 | MICROPROCESSOR SYS DES. |
| TB319/D | N | 26.25 | 30.20 | MC68000 ASSY LANG. |
| TB320/D | N | 31.50 | 36.25 | THE 68000 FAMILY VOL 1 |
| TB321/D | N | 33.05 | 41.30 | PRACTICAL SWITCHING POWER |
| TB322/D | N | 32.30 | 37.15 | 68000 FAMILY VOL 2 |

# BOOK LIST & PRICES

| MOTOROLA ORDER NUMBER | | UNIVERSITY PRICE | BOOK PRICE | DESCRIPTION |
|---|---|---|---|---|
| **TEXTBOOKS** | | | | |
| TB323/D | N | 16.95 | 19.50 | THE 68000 BOOK |
| TB324/D | N* | 43.75 | 54.70 | REAL-TIME APL.W/DSP56000 |
| TB325/D | N | 37.40 | 46.75 | USING SMALL MICRO's. |
| TB326/D | N | 32.75 | 39.95 | RADIO FREQ. TRANS. PRINCIPLES |
| TB327/D | N | 25.05 | 31.30 | MOTOROLA MC68332 MCU |
| **SAMPLE KITS** | | | | |
| KITDEVB103/D | | 95.00 | 95.00 | MPM3002 LOGIC TO MOTOR EVB |
| KITDEVB104/D | | 75.00 | 75.00 | MPX5100 PRESSURE REGULATOR |
| KITDEVB114/D | | 95.00 | 95.00 | MPX5100 SENSOR TO MPU EVB |
| KITDEVB118/D | | 95.00 | 95.00 | MPM3002 ANALOG TO MOTOR EVB |
| KITDEVB126/D | | 75.00 | 75.00 | MPX7100 4-20MA PRES TRANS EVB |
| KITDEVB129/D | | 50.00 | 50.00 | MPX5100 PRESSURE GAUGE |
| KITNOK26/D | | 40.00 | 40.00 | BRUSHLESS MOTOR DRIVE |
| SEK-1KIT/D | | 10.00 | 10.00 | SENSOR EVALUATION KIT |
| **OTHER BROCHURES** | | | | |
| BR107/D | * | 0.90 | 0.90 | MACROCELL ARRAY GUIDE |
| BR121/D | * | 1.65 | 1.65 | PRESSURE SENSORS |
| BR135/D | * | 0.20 | 0.20 | APPLICATION NOTE CATALOG |
| BR165/D | * | 1.50 | 1.50 | MCA800/2500ECL ARRAYS |
| BR312/D | * | 1.00 | 1.00 | MCA2800RAM/MCA2800ALS |
| BR1104/D | * | 0.35 | 0.35 | FDD CHIP SET |
| BR1105/D | * | 1.75 | 1.75 | DSP FAMILIES |
| BR1107/D | * | 0.30 | 0.30 | LONWORKS APPLICATIONS PRMR |
| BR1108/D | * | 0.30 | 0.30 | LONWORKS PROD LINE BRIEF |
| BR1202/D | * | 6.00 | 6.00 | QSR CORP QUALITY SYS REVIEW |
| BR176/D | * | 0.75 | 0.75 | 68000 GLOBAL PREFORMANCE STAND |
| BR188/D | * | 0.80 | 0.80 | VOICE/DATA COMM CIRCUITS |
| BR191/D | * | 0.70 | 0.70 | SS FOUNDATION FOR INDUST AUTO |
| BR192/D | * | 1.00 | 1.00 | IMPROVE YOUR ENTERTAINMENT PROD |
| BR261/D | * | 2.10 | 2.50 | 8-BIT MCU & MPU FAMILIES (REV 2 ) |
| BR277/D | * | 0.50 | 0.50 | M6804 FAMILY HIGH VOLUME |
| BR347/D | * | 0.60 | 0.60 | BIPOLAR LOGIC CIRCUITS |
| BR348/D | * | 0.15 | 0.15 | TECH TRAINING CATALOG (REV 8) |
| BR378/D | * | 0.55 | 0.55 | UNIT/PakSM PACKING |
| BR380/D | * | 0.85 | 0.85 | BAR CODE LABEL SPEC (REV 3) |
| BR392/D | * | 1.50 | 1.50 | STATISTICAL PROCESS CONTROL |
| BR504/D | * | 0.15 | 0.15 | ELEC TUNING ADDRESS SYS |
| BR525/D | * | 0.40 | 0.40 | ISDN REVolution (REV 1) |
| BR527/D | * | 0.15 | 0.15 | 8-BIT MCU UNIT S/W PKG |
| BR705/D | * | 0.15 | 0.15 | 32-BIT MPU PREFORMANCE REPORT |
| BR722/D | * | 0.55 | 0.70 | MCM202 32Kx8-BIT FAST S RAM |

# BOOK LIST & PRICES

| MOTOROLA ORDER NUMBER | | UNIVERSITY PRICE | BOOK PRICE | DESCRIPTION |
|---|---|---|---|---|
| **OTHER BROCHURES** | | | | |
| BR724/D | * | 3.00 | 3.00 | UNIX SYSTEMS & S/W |
| BR726/D | * | 1.35 | 1.75 | WE HAVE EVERYBODY TALKING |
| BR746/D | * | 0.50 | 0.50 | CELL-BASED PRODUCTS Q&A (REV 2) |
| BR758/D | * | 1.00 | 1.00 | STUDENT DESIGN CONTEST BOOK |
| BR759/D | * | 0.45 | 0.45 | AUTOMOTIVE FUTURE WITH DSP |
| BR762/D | * | 0.50 | 0.50 | DRAM MODULES |
| BR784/D | * | 0.15 | 0.15 | MC68HC56/57 TECH SUM |
| BR785/D | * | 0.15 | 0.15 | XC68HC27 TECH SUM |
| BR906/D | * | 1.00 | 1.00 | OPEN ARCHITECTURE CAD SYS |
| BR925/D | * | 2.00 | 2.00 | SIX SIGMA ROADMAP |
| BR931/D | * | 1.35 | 1.35 | SYMBOLS |
| BR934/D | * | 1.00 | 1.00 | SENSING SOLUTIONS FROM MOTOROLA |
| **DATA DISKS** | | | | |
| DK107/D | | 2.15 | 2.15 | IMPEDANCE MATCHING PROGRAM (PC) |
| DK202/D | | 2.00 | 2.20 | SPICE DISK AN1043/D (MAC) |
| DK301/D | | 2.00 | 2.20 | SPICE DISK AN1043/D (PC) |
| DK304/D | | 1.60 | 1.60 | SG73 SELECTOR GUIDE DATA DISK (PC) |

N= NOT AVAILABLE FOR DONATION
*= 8 1/2 X 11 inch bks
all others are 7 X 9 inch

**FAX OR MAIL ORDERS TO EITHER AUSTIN OFFICE or PHOENIX OFFICE**

UNIVERSITY LITERATURE ORDER FORMS
ON PAGE 126 & 127.

# COMPONENT SUPPORT

To help instructors and students supplement textbook study and learn first-hand about advanced Motorola semiconductors and their representative technologies, we offer free product samples for academic use. These devices provide hands-on opportunities for real-time research experience and a chance to learn about Motorola state-of-the-art products supplied to the global electronics industry.

Many components are free for the asking, in limited quantities. If larger numbers are needed for wider classroom use, Motorola can extend special discounted pricing. Sample donations are subject to Motorola's discretion and product availability.

For your general information we have listed the device type prefix index to help you identify the product offering available from Motorola. Following the product prefix listing we have included a few sample pages of device listings to give just a brief look at the variety of devices manufactured by Motorola with standard pricing for these few select devices. This listing is by no means a complete list of product available to academia.

# COMPONENT SUPPORT

Motorola University Support allows a significant discount on all of the devices available. Normal discount is approximately 40% on all product.

For more information on Motorola's free samples send us a letter on your Institution's letterhead requesting the items needed. Or, request that we provide you with the Master Selector Guide (SG73) to help with identifying the Motorola parts requested. Allow 8-10 working days for shipment on most product.

With a product offering of over 49,000 devices we have only listed a few pages to give you a very limited view of the products that are available.

You will want to have a current Master Selector Guide (SG73) to provide you with a more concise listing of the Motorola semiconductor devices available.

# DEVICE TYPE

| Prefix | Description |
|---|---|
| AM | Linear Interface |
| BC | Surface Mount Transistor |
| BS | General Purpose Transistor |
| BU | Silicon Power |
| BYV/BYW | Schottky Rectifiers |
| BZX | Zener Diode |
| C | Thyristor SCR's |
| CA | Linear Integrated Circuits |
| CNY | Optocoupler Transistor |
| D | Silicon Power Plastic Bipolar |
| DA | Linear Integrated Circuits |
| DSP | Digital Signal Processor |
| FT | Silicon Power Plastic |
| H | Opto |
| ICTE | Zener Transient Suppressor |
| IRF | TMOS Power MOSFET |
| J | Small Signal Fets |
| LF | Linear JFET OP Amp |
| LM | Linear Integrated Circuits |
| MAC | Thyristor-(Triac) |
| MACH | Thyristor-(Triac) |
| MAD | Small Signal Diode Arrays |
| MBD | Diode-Hot Carrier |
| MBR | Schottky Rectifiers |
| MBS | Bidirectional Switch Trigger |
| MC | Integrated Circuits |
| MCA | Opto |
| MCC | Linear Integrated Circuits |
| MCCF | Linear Flip Chip |
| MCCS | MOS D&A PC Devices |
| MCL | Diode-Current Limiting |
| MCM | Integrated Circuits-Memories |

# DEVICE TYPE

| Prefix | Description |
|---|---|
| **MCR** | Thyristors (SCR) |
| **MC-SO** | Linear Integrated Circuits |
| **MCT** | Opto |
| **MD** | Small Signal Duals (Multiple Device) |
| **MDA** | Assemblies-Rectifier Assemblies-Diodes |
| **MDS** | Pwr Plastic Duowatt |
| **MFE** | Transistor Field Effect-Metal Can |
| **MFO** | Fiber Optics |
| **MHQ** | Small Signal Quad |
| **MHW** | RF Linear Modules |
| **MJ** | Silicon Power Bipolar |
| **MJD** | Silicon Power Bipolar Surface Mount (DPAK) |
| **MJE** | Silicon Power Plastic |
| **MJH/MJW** | Silicon Power Plastic Bipolar |
| **MK1V/MKP** | Thyristor H/V Trigger-Sidacs |
| **MLED** | Optoelectronics Light-Emitting Diode |
| **MLL** | Leadless Zener Diode |
| **MM** | Transistor-Small Signal RF Power |
| **MMAD** | Diode Array |
| **MMBA** | SOT-23 Transistor |
| **MMBD** | SOT-23 Diodes |
| **MMBF** | SOT-23 FETs |
| **MMBR** | SOT-23 RF Transistor |
| **MMBS** | SOT-23 SCR |
| **MMBT** | SOT-23 Transistors |
| **MMBV** | SOT-23 Tuning Diodes |
| **MMBZ** | SOT-23 Zener Diodes |
| **MMCM** | SS Ceramic Micro-T Transistors |
| **MMPQ** | Surface Mount Quad Transistors |
| **MMUN** | Bias Resistor Transistor |
| **MOC** | Optoelectronic Couplers |

# DEVICE TYPE

| Prefix | Description |
|---|---|
| MPC | SMARTMOS |
| MPF | Field Effect Transistor |
| MPN | Diode-Pin (Switching) |
| MPQ | SS Plastic Dip Quads |
| MPS | Transistor-Plastic Small Signal |
| MPSA | Small Signal Transistor |
| MPSD | Small Signal Display Series |
| MPSH | Small Signal High Frequency Series |
| MPSL | Small Signal Lamp Driver Series |
| MPSW | Small Signal Plastic Transistors |
| MPTE | Zener Transient Suppressor |
| MPU | Transistor-Programmable Unijunction |
| MPX | Pressure Sensors |
| MPZ | Transient Suppressor (Power Zener Diodes) |
| MQ | Transistor-Quad Flat Pack |
| MR | Rectifier |
| MRD | Optoelectronic Detectors |
| MRF | Transistors-RF and Microwave |
| MRL | Rectifiers |
| MSS | Small Signal Plastic TO-92 Diode |
| MTD | TMOS Power MOSFET |
| MTH/MTM | TMOS Power MOSFET |
| MTP | TMOS Power MOSFET |
| MTS | Temperature Sensors |
| MTW | TMOS Power MOSFET |
| MUN | Bias Resistor Transistor |
| MUR | Rectifiers Ultrafast |
| MV | Diode Tuning (Varactor) |
| MVAM | Tuning Diode (Hyper-abrupt) |
| MVS | Voltage Stabilizer Diode |
| MWA | RF Linear Modules |
| MXF | Small Signal Metal |

# DEVICE TYPE

| Prefix | Description |
|---|---|
| MZ | Diode-Zener |
| MZG | Glass Alloy Zener Diodes |
| MZT | Zener Diodes |
| N8T | Linear Integrated Circuits |
| NE | Linear Integrated Circuits |
| OP | Linear Integrated Circuits |
| P | Zener Transient Suppressor |
| PN | Small Signal Plastic Transistor |
| PZT | Small Signal Transistor SOT-223 |
| R | Rectifier Fast Recovery |
| S | Thyristors SCR's |
| SAA | Linear Integrated Circuits |
| SC | Thyristors Triac's |
| SD | Rectifiers |
| SE | Linear Integrated Circuits |
| SG | Linear Integrated Circuits |
| SN | MTTL LS/Linear Int. Cir. |
| T | Thyristor Traic's |
| TCA | Linear Integrated Circuits |
| TCF | Linear Integrated Circuits |
| TDA | Linear Integrated Circuits |
| TIL | Opto |
| TIP | Silicon Power Plastic Bipolar |
| TL | Linear Integrated Circuits |
| U | Linear Integrated Circuits |
| UA | Linear Integrated Circuits |
| ULN | Linear Integrated Circuits |
| VN | Small Signal FET |
| XC | Pilot Production Prototype |
| ZPD | Zener Diode DO-35 |

# A FEW LINEAR

| | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| Type No. | Grp/Description | PC | Qty | Price | Qty | Price |
| LM2931T-5.0 | L LIN LOW DROPOUT 5V REG | 2 | 50 | .86 | 500 | .58 |
| LM2931Z-5.0 | L LIN LOW DROPOUT 5V REG | 2 | 2000 | .44 | | |
| LM2935T | L LIN LO-DRPOUT DL REG | 2 | 50 | 2.58 | 500 | 1.74 |
| LM301AD | L LIN EXT COMP OP AMP | U | 96 | .58 | | |
| LM301ADR2 | L LIN EXP COMP OP AMP T/R | U | 2500 | .62 | | |
| LM301AJD | L LIN EXT COMP OP AMP | 3 | 960 | 2.17 | | |
| LM301AN | L LIN EXT COMP OP AMP | 2 | 1000 | .54 | 2000 | .36 |
| LM301AND | L LIN EXT COMP OP AMP | 3 | 1000 | 1.60 | | |
| LM307N | L LIN EXT COMP OP AMP | U | 1000 | .60 | | |
| LM308AD | L LIN SUPER GAIN OP AMP | U | 96 | 1.12 | | |
| LM308AJ | L LIN SUPER GAIN OP AMP | 3 | 500 | 3.33 | | |
| LM308AJ-8 | L LIN SUPER GAIN OP AMP | 3 | 960 | 3.18 | | |
| LM308AJ-8D | L LIN SUPER GAIN OP AMP | 3 | 960 | 3.48 | | |
| LM308AN | L LIN SUPER GAIN OP AMP | 2 | 1000 | .92 | 2000 | .62 |
| LM308AND | L LIN SUPER GAIN OP AMP | 3 | 1000 | 1.83 | | |
| LM308D | L LIN SUPER GAIN OP AMP | U | 96 | 1.29 | | |
| LM308J-8D | L LIN SUPER GAIN OP AMP | 3 | 960 | 2.66 | | |
| LM308N | L LIN SUPER GAIN OP AMP | 2 | 1000 | .77 | 2000 | .52 |
| LM308ND | L LIN SUPER GAIN OP AMP | 3 | 1000 | 1.83 | | |
| LM311D | L LIN HI PERF VOLT COMP | 2 | 96 | .60 | 480 | .41 |
| LM311J-8 | L LIN HI PERF VOLT COMP | 2 | 960 | 2.88 | 1920 | 1.94 |
| LM311N | L LIN HI PERF VOLT COMP | 1 | 1000 | .54 | 2000 | .36 |
| LM311ND | L LIN HI PERF VOLT COMP | 3 | 1000 | 1.20 | | |
| LM317BT | L LIN 3TERM POS ADJ VOLT RE | 2 | 50 | 1.08 | 500 | .73 |
| LM317D2T | L POS ADJ VOLT REG | N | 1 | 1.61 | 500 | 1.09 |
| LM317LBD | L LIN 100 MA 3TRM VOLT REG | 2 | 96 | .49 | | |
| LM317LBZ | L 100 MA VOLT REG | N | 2000 | .44 | | |
| LM317LD | L LIN 100 MA 3TRM VOLT REG | 2 | 96 | .42 | | |
| LM317LZ | L LIN LOW CURR ADJ POS REG | 1 | 2000 | .36 | | |
| LM317LZD | L LIN LOW CURR ADJ POS REG | 3 | 2000 | 1.76 | | |
| LM317MABDT | L MED CURRENT POS ADJ VREG | 2 | 1500 | 2.17 | 3000 | 1.46 |
| LM317MABDT-1 | L MED CURRENT POS ADJ VREG | 2 | 1500 | 2.17 | 3000 | 1.46 |
| LM317MABT | L VOLT REG | 2 | 50 | 1.83 | 2500 | 1.23 |
| LM317MADT | L MED CURRENT POS ADJ VREG | 2 | 1500 | 1.96 | 3000 | 1.32 |
| LM317MADT-1 | L MED CURRENT POS ADJ VREG | 2 | 1500 | 1.96 | 3000 | 1.32 |
| LM317MAT | L MED CURRENT POS ADJ VREG | 2 | 50 | 1.51 | 500 | 1.02 |
| LM317MBDT | L MED CURRENT POS ADJ VREG | 2 | 1500 | 1.57 | 3000 | 1.06 |
| LM317MBDT-1 | L MED CURRENT POS ADJ VREG | 2 | 1500 | 1.57 | 3000 | 1.06 |
| LM317MBT | L ADV POS VOLT REG | 2 | 50 | 1.12 | 2500 | .75 |
| LM317MDT | L LIN ADV. POS. VOLT. REG | 1 | 1500 | 1.35 | 3000 | .91 |
| LM317MDT-1 | L LIN ADV. POS. VOLT. REG | 2 | 75 | 1.35 | 750 | .91 |
| LM317MT | L LIN MED CURR ADJ POS REG | 1 | 50 | .90 | 500 | .61 |
| LM317T | L LIN ADJ POS VOLT REG | 1 | 50 | .86 | 500 | .58 |
| LM323AT | L LIN 3 AMP 5V POS VOLT REG | 2 | 50 | 5.40 | 500 | 3.63 |
| LM323T | L LIN 3 AMP 5V POS VOLT REG | 2 | 50 | 4.84 | 500 | 3.26 |

# A FEW LINEAR

| | | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|---|
| Type No. | Grp/Description | | PC | Qty | Price | Qty | Price |
| LM324AD | L | LIN QUAD LOW POWER OP AMP | 2 | 55 | .97 | 550 | .65 |
| LM324AN | L | LIN QUAD LOW POWER OP AMP | 2 | 500 | .92 | 2000 | .62 |
| LM324AND | L | LIN QUAD LOW POWER OP AMP | 3 | 500 | 1.90 | | |
| LM324D | L | LIN QUAD LOW POWER OP AMP | 2 | 55 | .69 | 495 | .46 |
| LM324DR2 | L | LIN QD LOW PWR OP AMP T/R | 2 | 2500 | .77 | | |
| LM324J | L | LIN QUAD LOW POWER OP AMP | U | 500 | 1.51 | | |
| LM324JD | L | LIN QUAD LOW POWER OP AMP | 3 | 500 | 2.93 | | |
| LM324N | L | LIN QUAD LOW POWER OP AMP | 1 | 500 | .69 | 2000 | .46 |
| LM324ND | L | LIN QUAD LOW POWER OP AMP | 3 | 500 | 1.24 | | |
| LM337AT | L | 3 TERM NEG ADJ REG | 2 | 50 | 2.02 | 2500 | 1.36 |
| LM337BT | L | LIN 3-TERM NEG VOLT REG | 2 | 50 | 1.48 | 500 | 1.00 |
| LM337D2T | L | ADJ NEG VOLT REG | N | 1 | 1.61 | 500 | 1.09 |
| LM337MT | L | LIN MED CURR ADJ NEG REG | 2 | 50 | 1.23 | 500 | .83 |
| LM337T | L | LIN ADJ NEG VOLT REG | 1 | 50 | 1.18 | 500 | .80 |
| LM339AD | L | LIN QUAD SNGL SPLY COMP | 2 | 55 | .80 | 550 | .54 |
| LM339AJD | L | LIN QUAD SNGL SPLY COMP | 3 | 500 | 2.59 | | |
| LM339AN | L | LIN QUAD SNGL SPLY COMP | 1 | 500 | .75 | 2000 | .51 |
| LM339AND | L | LIN QUAD SNGL SPLY COMP | 3 | 500 | 2.00 | | |
| LM339D | L | LIN QUAD SNGL SPLY COMP | 2 | 55 | .69 | 2750 | .46 |
| LM339DR2 | L | LIN QD SNGL SPLY COMP T/R | 2 | 2500 | .73 | 5000 | .49 |
| LM339J | L | LIN QUAD SNGL SPLY COMP | 2 | 500 | 1.51 | 1000 | 1.02 |
| LM339N | L | LIN QUAD SNGL SPLY COMP | 1 | 500 | .69 | 2000 | .46 |
| LM339ND | L | LIN QUAD SNGL SPLY COMP | 3 | 500 | 1.05 | | |
| LM340AT-12 | L | LIN 3-TERM POS 12V REG | 2 | 50 | 1.16 | 500 | .78 |
| LM340AT-15 | L | LIN 3-TERM POS 15V REG | 2 | 50 | 1.16 | 500 | .78 |
| LM340AT-5.0 | L | LIN 3-TERM POS 5V REG | 2 | 50 | 1.16 | 500 | .78 |
| LM340T-12 | L | LIN 3-TERM POS 12V REG | 2 | 50 | .71 | 500 | .48 |
| LM340T-15 | L | LIN 3-TERM POS 15V REG | 2 | 50 | .71 | 500 | .48 |
| LM340T-18 | L | LIN 3-TERM POS 18V REG | 3 | 50 | 2.17 | | |
| LM340T-24 | L | LIN 3-TERM POS 24V REG | U | 50 | .77 | | |
| LM340T-5.0 | L | LIN 3-TERM POS 5V REG | 1 | 50 | .71 | 500 | .48 |
| LM340T-6.0 | L | LIN 3-TERM POS 6V REG | 3 | 50 | 1.86 | | |
| LM340T-8.0 | L | LIN 3-TERM POS 8V REG | U | 50 | .79 | | |
| LM348D | L | LIN (QUAD MC1741) OP AMP | U | 55 | .90 | | |
| LM348J | L | LIN (QUAD MC1741) OP AMP | 2 | 500 | 2.88 | 2000 | 1.94 |

A = Signal, Power, Communications
F = MOS D&A, DSP, AMCU/CSIC
G = MPU, RISC, FSRAM, DRAM
L = Linear, Logic, ASIC, DMO/MPO

P = Proprietary Device
🦅 = Phoenix Program
* = First Time in Book
† = $200 Minimum Waived

# A FEW MEMORY

| | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| Type No. | Grp/Description | PC | Qty | Price | Qty | Price |
| MCM6264CJ12 | G 8K X 8 .8UM CMOS FSRAM | 2 | 26 | 6.96 | 104 | 6.17 |
| MCM6264CJ15 | G 8KX8 .8UM CMOS FSRAM | 2 | 26 | 4.46 | 104 | 3.95 |
| MCM6264CJ20 | G 8KX8 .8UM CMOS FSRAM | 2 | 26 | 4.05 | 104 | 3.59 |
| MCM6264CJ25 | G 8KX8 .8UM CMOS FSRAM | 2 | 26 | 4.05 | 104 | 3.59 |
| MCM6264CJ35 | G 8KX8 .8UM CMOS FSRAM | 2 | 26 | 4.05 | 104 | 3.59 |
| MCM6264CP12 | G 8KX8 .8UM CMOS FSRAM | 2 | 14 | 6.96 | 112 | 6.17 |
| MCM6264CP15 | G 8KX8 .8UM CMOS FSRAM | 2 | 14 | 4.46 | 112 | 3.95 |
| MCM6264CP20 | G 8KX8 .8UM CMOS FSRAM | 2 | 14 | 4.05 | 112 | 3.59 |
| MCM6264CP25 | G 8KX8 .8UM CMOS FSRAM | 2 | 14 | 4.05 | 112 | 3.59 |
| MCM6264CP35 | G 8KX8 .8UM CMOS FSRAM | 2 | 14 | 4.05 | 112 | 3.59 |
| MCM6265CJ12 | G 8K X 9 .8UM CMOS FSRAM | 2 | 26 | 7.70 | 104 | 6.82 |
| MCM6265CJ15 | G 8KX9 .8UM CMOS FSRAM | 2 | 26 | 4.91 | 104 | 4.35 |
| MCM6265CJ20 | G 8KX9 .8UM CMOS FSRAM | 2 | 26 | 4.46 | 104 | 3.95 |
| MCM6265CJ25 | G 8KX9 .8UM CMOS FSRAM | 2 | 26 | 4.46 | 104 | 3.95 |
| MCM6265CJ35 | G 8KX9 .8UM CMOS FSRAM | 2 | 26 | 4.46 | 104 | 3.95 |
| MCM6265CP12 | G 8KX9 .8UM CMOS FSRAM | 2 | 14 | 7.70 | 112 | 6.82 |
| MCM6265CP15 | G 8KX9 .8UM CMOS FSRAM | 2 | 14 | 4.91 | 112 | 4.35 |
| MCM6265CP20 | G 8KX9 .8UM CMOS FSRAM | 2 | 14 | 4.46 | 112 | 3.95 |
| MCM6265CP25 | G 8KX9 .8UM CMOS FSRAM | 2 | 14 | 4.46 | 112 | 3.95 |
| MCM6265CP35 | G 8KX9 .8UM CMOS FSRAM | 2 | 14 | 4.46 | 112 | 3.95 |
| MCM62940AFN11-5 | G 32KX9 .8UM SYNCH BURSTRAM | 2 | 1 | 34.97 | 100 | 27.78 |
| MCM62940AFN12 | G 32K X 9 BURSTRAM .8UM | 2 | 1 | 31.23 | 100 | 24.81 |
| MCM62940AFN14 | G 32K X 9 BURSTRAM .8UM | 2 | 1 | 24.98 | 100 | 19.85 |
| MCM62940AFN19 | G 32K X 9 BURSTRAM .8UM | 2 | 1 | 16.49 | 100 | 13.10 |
| MCM62940AFN24 | G 32K X 9 BURSTRAM .8UM | 2 | 1 | 13.00 | 100 | 10.32 |
| MCM62980J15 | G 64K X 4 SYNCHRONOUS FSRAM | 2 | 1 | 44.80 | 100 | 39.20 |
| MCM62980J20 | G 64K X 4 SYNCHRONOUS FSRAM | 2 | 1 | 44.80 | 100 | 39.20 |
| MCM62990AFN15 | G 16K X 16 .8UM SYNCH FSRAM | Ⓜ | 1 | 22.26 | 100 | 19.88 |
| MCM62990AFN20 | G 16K X 16 .8UM SYNCH FSRAM | Ⓜ | 1 | 18.55 | 100 | 16.56 |
| MCM62990AFN25 | G 16KX16 .8UM CMOS FSRAM | Ⓜ | 1 | 17.63 | 100 | 15.74 |
| MCM62995AFN15 | G 16KX16 LATCHED CMOS FSRAM | Ⓜ | 1 | 21.34 | 100 | 19.05 |
| MCM62995AFN20 | G 16KX16 LATCHED FSRAM | Ⓜ | 1 | 17.81 | 100 | 15.90 |
| MCM62995AFN25 | G 16KX16 LATCHED CMOS FSRAM | Ⓜ | 1 | 16.88 | 100 | 15.08 |
| MCM62996FN15 | G 16KX16 .8UM CMOS FSRAM | Ⓜ | 1 | 15.76 | 100 | 14.08 |
| MCM62996FN20 | G 16KX16 .8UM CMOS FSRAM | Ⓜ | 1 | 12.99 | 100 | 11.60 |
| MCM62996FN25 | G 16KX16 .8UM CMOS FSRAM | Ⓜ | 1 | 12.61 | 100 | 11.26 |
| MCM67A618FN12 | G 64K X 18 BICMOS ASM | N | 1 | 88.00 | 100 | 77.00 |
| MCM67A618FN15 | G 64K X 18 BICMOS ASM | N | 1 | 80.00 | 100 | 70.00 |
| MCM67B518FN10 | G 32KX18 .8UM BICM. BUR.RAM | N | 1 | 43.12 | 100 | 37.73 |
| MCM67B518FN12 | G 32KX18 .8UM BICM. BUR.RAM | N | 1 | 39.20 | 100 | 34.30 |
| MCM67B518FN9 | G 32KX18 .8UM BICM. BUR.RAM | N | 1 | 43.12 | 100 | 37.73 |
| MCM67B618FN10 | G 64K X 18 .8UM BICMOS | N | 1 | 88.00 | 100 | 77.00 |
| MCM67B618FN12 | G 64KX18 SYNCH .8UM BICMOS | N | 1 | 80.00 | 100 | 70.00 |
| MCM67B618FN9 | G 64KX18 SYNCH .8UM BICMOS | N | 1 | 88.00 | 100 | 77.00 |
| MCM67C618FN7 | G 64K X 18 0.8UM BICMOS | N | 1 | 88.00 | 100 | 77.00 |

# A FEW MEMORY

| Type No. | Grp/Description | PC | Per Unit Sugg. Resale Price Qty | Price | Qty | Price |
|---|---|---|---|---|---|---|
| MCM67C618FN9 | G 64K X 18 BICMOS ASM | N | 1 | 80.00 | 100 | 70.00 |
| MCM67H518FN12 | G 32K X 18 SYNC FSRAM | N | 1 | 39.20 | 100 | 34.30 |
| MCM67H518FN9 | G 32K X 18 SYNC FSRAM | N | 1 | 43.12 | 100 | 37.73 |
| MCM67H618FN12 | G 64K X 18 0.8UM BICMOS | N | 1 | 80.00 | 100 | 70.00 |
| MCM67H618FN9 | G 64K X 18 0.8UM BICMOS | N | 1 | 88.00 | 100 | 77.00 |
| MCM67J618FN7 | G 64K X 18 0.8UM BICMOS | N | 1 | 88.00 | 100 | 77.00 |
| MCM67J618FN9 | G 64K X 18 0.8UM BICMOS | N | 1 | 88.00 | 100 | 77.00 |
| MCM67M518FN11 | G 32 X 18 0.8UM BICMOS | N | 1 | 39.20 | 100 | 34.30 |
| MCM67M518FN14 | G 32 X 18 0.8UM BICMOS | N | 1 | 39.20 | 100 | 34.30 |
| MCM67M518FN9 | G 32 X 18 0.8UM BICMOS | N | 1 | 43.12 | 100 | 37.73 |
| MCM67M618FN11 | G 64K X 18 BICMOS ASM | N | 1 | 80.00 | 100 | 70.00 |
| MCM67M618FN14 | G 64K X 18 BICMOS ASM | N | 1 | 80.00 | 100 | 70.00 |
| MCM67M618FN9 | G 64K X 18 .8UM BICMOS ASM | N | 1 | 88.00 | 100 | 77.00 |
| MCM6705AJ10 | G 0.8UM BICMOS 32KX9 STATIC | 2 | 1 | 37.57 | 1000 | 29.84 |
| MCM6705AJ12 | G 0.8UM BICMOS 32KX9 STATIC | 2 | 1 | 27.32 | 1000 | 21.71 |
| MCM6706AJ10 | G 0.8UM 32KX8 BICMOS FSRAM | 2 | 1 | 22.77 | 100 | 18.09 |
| MCM6706AJ12 | G 0.8UM 32KX8 BICMOS FSRAM | 2 | 1 | 17.08 | 1000 | 13.57 |
| MCM6706AJ8 | G 0.8UM 32KX8 BICMOS FSRAM | 2 | 1 | 35.06 | 1000 | 27.86 |
| MCM6706RJ6 | G 32K X 8 BICMOS TTL FSRAM | N | 1 | 70.20 | 1000 | 55.77 |
| MCM6706RJ7 | G 32K X 8 BICMOS TTL FSRAM | N | 1 | 52.65 | 1000 | 41.83 |
| MCM6706RJ8 | G 32K X 8 BICMOS TTL FSRAM | N | 1 | 35.10 | 100 | 27.89 |
| MCM6708AJ10 | G 0.8UM 64KX4 BICMOS FSRAM | 2 | 1 | 22.77 | 1000 | 18.09 |
| MCM6708AJ12 | G 0.8 UM 64KX4 BICMOS FSRAM | 2 | 1 | 17.08 | 1000 | 13.57 |
| MCM6708AJ8 | G 0.8UM 64KX4 BICMOS FSRAM | 2 | 1 | 35.06 | 1000 | 27.86 |
| MCM6709AJ10 | G 64KX4 .8UM BICMOS FSRAM | 2 | 1 | 22.77 | 1000 | 18.09 |
| MCM6709AJ12 | G 64KX4 .8UM BICMOS FSRAM | 2 | 1 | 17.08 | 1000 | 13.57 |
| MCM6709AJ8 | G 64KX4 .8UM BICMOS FSRAM | 2 | 1 | 35.06 | 1000 | 27.86 |
| MCM6709RJ6 | G 64K X 4 BICMOS TTL FSRAM | N | 1 | 70.20 | 1000 | 55.77 |
| MCM6709RJ7 | G 64K X 4 BICMOS TTL FSRAM | N | 1 | 52.65 | 1000 | 41.83 |
| MCM6709RJ8 | G 64K X 4 BICMOS TTL FSRAM | N | 1 | 35.10 | 1000 | 27.89 |
| MCM6726AWJ10 | G 128KX8 .8UM BICMOS FSRAM | N | 1 | 108.00 | 100 | 85.80 |
| MCM6726AWJ12 | G 128KX8 .8UM BICMOS FSRAM | N | 1 | 81.00 | 100 | 64.35 |
| MCM6726AWJ15 | G 128KX8 .8UM BICMOS FSRAM | N | 1 | 64.80 | 100 | 51.48 |
| MCM6726AWJ8 | G 128KX8 .8UM BICMOS FSRAM | N | 1 | 270.00 | 100 | 214.50 |
| MCM6726WJ10 | G 128K X 8 BICMOS TTL | 2 | 1 | 118.80 | 100 | 94.38 |

A = Signal, Power, Communications
F = MOS D&A, DSP, AMCU/CSIC
G = MPU, RISC, FSRAM, DRAM
L = Linear, Logic, ASIC, DMO/MPO

P = Proprietary Device
♛ = Phoenix Program
* = First Time in Book
† = $200 Minimum Waived

# CMOS & LINEAR

| | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| Type No. | Grp/Description | PC | Qty | Price | Qty | Price |
| MC1412P | L LIN PERIPHERAL DRVR ARRAY | U | 500 | .92 | | |
| MC1412PD | L LINEAR BETTER PROGRAM | 3 | 500 | 1.80 | | |
| MC1413BD | L LIN PER DRVR ARRAY | 2 | 48 | 1.03 | 480 | .70 |
| MC1413BP | L LIN PER DRVR ARRAY | 2 | 500 | 1.14 | 2000 | .77 |
| MC1413D | L LIN PERIPHERAL DRVR ARRAY | 1 | 48 | .90 | 480 | .61 |
| MC1413DR2 | L PERIPHERAL DRVR ARRAY | 2 | 2500 | .90 | | |
| MC1413P | L LIN PERIPHERAL DRVR ARRAY | 2 | 500 | .90 | 2000 | .61 |
| MC1413PD | L LIN PERIPHERAL DRVR ARRAY | 3 | 500 | 1.80 | | |
| MC1416BD | L LIN PER DRVR ARRAY | 2 | 48 | 1.03 | 480 | .70 |
| MC1416BP | L LIN PER DRVR ARRAY | 2 | 500 | 1.14 | 2000 | .77 |
| MC1416D | L LIN PERIPHERAL DRVR ARRAY | U | 48 | .90 | | |
| MC1416DR2 | L LIN PERIPHERAL DRVR ARRAY | N | 2500 | .90 | 5000 | .61 |
| MC1416P | L LIN PERIPHERAL DRVR ARRAY | 2 | 500 | .90 | 2000 | .61 |
| MC1416PD | L LIN PERIPHERAL DRVR ARRAY | 3 | 500 | 1.83 | | |
| MC14161BCL | L CMOS 4 BIT BINARY CNTR | 3 | 25 | 2.79 | | |
| MC14161BCP | L CMOS 4 BIT BINARY CNTR | 2 | 25 | .72 | 500 | .58 |
| MC14161BCPD | L CMOS 4 BIT BINARY CNTR | 3 | 25 | 1.73 | | |
| MC14161BD | L CMOS 4 BIT BINARY CNTR | U | 48 | .72 | | |
| MC141620FU | F ENHANCED COMB FILTER | 2 | 50 | 18.75 | 500 | 10.73 |
| MC141621AFU | F ADVANCED COMB FILTER | N | 50 | 20.00 | 500 | 11.44 |
| MC141625AFU | F ADVANCED PAL COMB FILTER | N | 50 | 22.50 | 500 | 12.87 |
| MC14163BCL | L CMOS 4-BIT BINARY CNTR | 3 | 25 | 2.79 | | |
| MC14163BCP | L CMOS 4-BIT BINARY CNTR | U | 500 | .86 | | |
| MC14163BCPD | L CMOS 4-BIT BINARY CNTR | 3 | 25 | 1.73 | | |
| MC14163BD | L CMOS 4-BIT BINARY CNTR | 3 | 48 | 1.60 | | |
| MC14174BCL | L CMOS HEX D-FF | 2 | 25 | 1.35 | 500 | 1.09 |
| MC14174BCP | L CMOS HEX D-FF | 1 | 25 | .63 | 500 | .51 |
| MC14174BCPD | L CMOS HEX D-FF | 3 | 25 | 1.73 | | |
| MC14174BD | L CMOS HEX D-FF | U | 48 | .64 | | |
| MC14174BDR2 | L HEX D FLIP-FLOP | 2 | 2500 | .67 | 5000 | .54 |
| MC14175BCL | L CMOS QUAD D-TYPE FF | 3 | 25 | 2.59 | | |
| MC14175BCP | L CMOS QUAD D-TYPE FF | 2 | 25 | .63 | 500 | .51 |
| MC14175BCPD | L CMOS QUAD D-TYPE FF | 3 | 25 | 1.80 | | |
| MC14175BD | L CMOS QUAD D-TYPE FF | 2 | 48 | .63 | 96 | .51 |
| MC14175BDR2 | L QUAD D FLIP-FLOP | 2 | 2500 | .67 | 5000 | .54 |
| MC14194BCL | L CMOS 4-BIT UNIVER S/R | 3 | 25 | 3.04 | | |
| MC14194BCP | L CMOS 4-BIT UNIVER S/R | U | 500 | .81 | | |
| MC143120DW | F NEURON IC | Ⓜ | 400 | 9.98 | | |
| MC143150FU | F NEURON IC (10MHZ) | Ⓜ | 200 | 9.98 | | |
| MC143150FU1 | F NEURON IC (5MHZ) | Ⓜ | 250 | 9.40 | | |
| MC1436CD | L LIN HI VOLT/INT COMP O.A. | 3 | 96 | 1.86 | | |
| MC1436CP1 | L LIN HI VOLT/INT COMP O.A. | 2 | 1000 | 1.08 | 2000 | .73 |
| MC1436CU | L LIN HI VOLT/INT COMP O.A. | 3 | 960 | 3.79 | | |
| MC1436D | L LIN HI VOLT/INT COMP O.A. | 3 | 96 | 1.93 | | |
| MC1436P1 | L LIN HI VOLT/INT COMP O.A. | 2 | 1000 | 1.14 | 2000 | .77 |

# CMOS & LINEAR

| Type No. | Grp/Description | PC | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| | | | Qty | Price | Qty | Price |
| MC1436U | L LIN HI VOLT/INT COMP O.A. | 2 | 960 | 2.90 | 1920 | 1.96 |
| MC144000EVK | F VIDEO CHIP SET EVAL BD | N | 1 | 1705.00 | | |
| MC144110DW | F CMOS HEX D/A CONV 6-BIT | 2 | 38 | 6.50 | 532 | 3.72 |
| MC144110P | F CMOS HEX D/A CONV 6 BIT | 2 | 21 | 6.50 | 504 | 3.72 |
| MC144111DW | F CMOS QUAD D/A CONV 6 BIT | 2 | 47 | 5.25 | 517 | 3.00 |
| MC144111P | F CMOS QUAD D/A CONV 6 BIT | 1 | 25 | 5.25 | 500 | 3.00 |
| MC14415FP | L CMOS QUAD TIMER/DRIVER | 3 | 25 | 13.52 | | |
| MC14415VP | L CMOS QUAD TIMER/DRIVER | U | 25 | 8.99 | | |
| MC14433DW | F 3 1/2 DIGIT A/D CONVERTER | 2 | 31 | 8.25 | 527 | 4.72 |
| MC14433P | F CMOS 3 1/2 DIGIT A/D CONV | 1 | 15 | 8.25 | 510 | 4.72 |
| MC14442FN | F LAST ORDER DATE: 07/21/94 | 2 | 39 | 8.25 | 507 | 4.72 |
| MC14442P | F LAST ORDER DATE: 07/21/94 | 2 | 13 | 7.50 | 507 | 4.29 |
| MC14443DW | F CMOS 8 BIT A/D SUBSYSTEM | U | 47 | 4.76 | | |
| MC14443P | F CMOS 8-BIT A/D SUBSYSTEM | 2 | 25 | 4.00 | 500 | 2.29 |
| MC14447DW | F CMOS 8-BIT A/D SUBSYSTEM | U | 47 | 7.45 | | |
| MC14447P | F CMOS 8-BIT A/D SUBSYSTEM | 2 | 25 | 6.25 | 500 | 3.58 |
| MC1445L | L LIN GATED WIDEBAND AMP | 2 | 500 | 2.99 | 2000 | 2.02 |
| MC14467P1 | F CMOS SMOKE DETECTOR, ION | 2 | 25 | 3.25 | 500 | 1.86 |
| MC14468P | F CMOS SMOKE DETECTOR, ION | 2 | 25 | 4.00 | 500 | 2.29 |
| MC14469FN | F CMOS ASYN RECEIVER/TRANS | 2 | 28 | 14.73 | 504 | 8.42 |
| MC14469P | F CMOS ASYN RECEIVER/TRANS | 1 | 9 | 13.38 | 504 | 7.65 |
| MC14470P | F SMOKE DETECTOR | 2 | 25 | 4.00 | 500 | 2.29 |
| MC14489DW | F LED DISPLAY/LAMP DRIVER | 2 | 38 | 4.88 | 532 | 2.79 |
| MC14489P | F LED DISPLAY/LAMP DRIVER | 1 | 18 | 4.88 | 504 | 2.79 |
| MC14490DW | L CMOS HEXBOUNCE ELIMINAT | 2 | 47 | 4.66 | 94 | 3.76 |
| MC14490L | L CMOS HEXBOUNCE ELIMINAT | 2 | 25 | 5.58 | 500 | 4.50 |
| MC14490P | L CMOS HEXBOUNCE ELIMINAT | 1 | 25 | 4.66 | 50 | 3.76 |
| MC14490PD | L CMOS HEXBOUNCE ELIMINAT | 2 | 25 | 4.86 | 50 | 3.92 |
| MC14495DW1 | F LATCH/DECODER/DRIVER | U | 1 | 5.74 | | |
| MC14495P1 | F CMOS HEX TO 7-SEG DRIVER | 1 | 25 | 3.63 | 500 | 2.07 |
| MC14497P | F CMOS 62-CH RMT CONT TRANS | 2 | 21 | 8.75 | 504 | 5.01 |
| MC14499DW | F CMOS 4-DIGIT 7 SEG DRIVER | U | 38 | 5.45 | | |
| MC14499P | F CMOS 4-DIGIT 7-SEG DRIVER | 1 | 21 | 4.50 | 504 | 2.57 |
| MC14500BCL | L CMOS 1-BIT ICU | 3 | 25 | 14.60 | | |
| MC14500BCP | L CMOS 1-BIT ICU | 2 | 25 | 6.18 | 50 | 3.91 |

Ⓜ = Motorola Blue Chip Program Device
N = Key New Motorola Device
R = Key "Focus" Motorola Device
U = Active/Non-Preferred Device

1 = Mature, Stable, High-Volume Device
2 = Moderate-Volume Device
3 = Low-Volume Device

# CMOS & TELECOMM

| | | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|---|
| Type No. | Grp/Description | | PC | Qty | Price | Qty | Price |
| MC14528BDR2 | L | DUAL MONOSTABLE MULTIVIBR | 2 | 2500 | .76 | 5000 | .61 |
| MC14529BCL | L | CMOS DUAL 4-CH DATA SELEC | 3 | 25 | 3.04 | | |
| MC14529BCP | L | CMOS DUAL 4-CH DATA SELEC | 2 | 25 | 1.08 | 500 | .87 |
| MC14529BD | L | CMOS DUAL 4-CH DATA SELEC | 2 | 48 | 1.08 | 96 | .87 |
| MC14530BCL | L | CMOS DUAL 5-I MAJ LOG GAT | 3 | 25 | 3.04 | | |
| MC14530BCP | L | CMOS DUAL 5-I MAJ LOG GAT | U | 500 | 1.13 | | |
| MC14530BD | L | CMOS DUAL 5-I MAJ LOG GAT | U | 48 | .97 | | |
| MC14531BCL | L | CMOS 12-BIT PARITY TREE | 3 | 25 | 2.97 | | |
| MC14531BCP | L | CMOS 12-BIT PARITY TREE | U | 500 | .90 | | |
| MC14531BCPD | L | CMOS 12-BIT PARITY TREE | 3 | 25 | 2.07 | | |
| MC14531BD | L | CMOS 12-BIT PARITY TREE | U | 48 | .91 | | |
| MC14532BCL | L | CMOS 8 BIT PRIORITY ENC | 3 | 25 | 2.76 | | |
| MC14532BCP | L | CMOS 8 BIT PRIORITY ENC | 1 | 25 | .72 | 500 | .58 |
| MC14532BCPD | L | CMOS 8 BIT PRIORITY ENC | 3 | 25 | 1.73 | | |
| MC14532BD | L | CMOS 8 BIT PRIORITY ENC | U | 48 | .73 | | |
| MC14532BDR2 | L | 8-BIT PRIORITY ENCODER | 2 | 2500 | .76 | 5000 | .61 |
| MC14534BCL | L | CMOS 5 CAS BCD CNTR | 3 | 15 | 11.06 | | |
| MC14534BCP | L | CMOS 5 CAS BCD CNTR | 2 | 15 | 5.36 | 30 | 4.32 |
| MC14536BCL | L | CMOS PROGRAMMABLE TIMER | 2 | 25 | 2.79 | 50 | 2.25 |
| MC14536BCP | L | CMOS PROGRAMMABLE TIMER | 1 | 25 | 1.53 | 500 | 1.23 |
| MC14536BCPD | L | CMOS PROGRAMMABLE TIMER | 3 | 25 | 3.28 | | |
| MC14536BDW | L | CMOS PROGRAMMABLE TIMER | 2 | 47 | 1.53 | 94 | 1.23 |
| MC14536BDWR2 | L | PROGRAMMABLE COUNTER | 2 | 1000 | 1.57 | 2000 | 1.26 |
| MC14538BCL | L | CMOS DUAL MONO MULTIVIB | 1 | 25 | 1.46 | 500 | 1.17 |
| MC14538BCP | L | CMOS DUAL MONO MULTIVIB | 1 | 25 | .81 | 500 | .65 |
| MC14538BCPD | L | CMOS DUAL MONO MULTIVIB | 2 | 25 | .99 | 500 | .80 |
| MC14538BD | L | DUAL PRESION MONSTABLE | N | 48 | .81 | 96 | .65 |
| MC14538BDW | L | CMOS DUAL MONO MULTIVIB | 2 | 47 | .81 | 94 | .65 |
| MC14538BDWR2 | L | DUAL PRECISON MONOSTABLE | 2 | 1000 | .85 | 2000 | .68 |
| MC14539BCL | L | CMOS DUAL 4-CH DATA SEL | 3 | 25 | 2.83 | | |
| MC14539BCP | L | CMOS DUAL 4-CH DATA SEL | 2 | 25 | .72 | 500 | .58 |
| MC14539BCPD | L | CMOS DUAL 4-CH DATA SEL | 3 | 25 | 1.73 | | |
| MC14539BD | L | CMOS DUAL 4-CH DATA SEL | U | 48 | .73 | | |
| MC145402L | F | 13 BIT LINEAR CODEC A/D | 2 | 25 | 14.38 | 500 | 8.22 |
| MC145403DW | F | 3X5 RS232 DRIVER/RECEIVER | 2 | 38 | 2.88 | 532 | 1.64 |
| MC145403DWR2 | F | 3X5 RS232 DRIVER/RECEIVER | 2 | 1000 | 1.46 | | |
| MC145403P | F | 3X5 RS232 DRIVER/RECEIVER | 2 | 18 | 2.88 | 504 | 1.64 |
| MC145404DW | F | 4X4 RS232 DRIVER/RECEIVER | 2 | 38 | 2.88 | 532 | 1.64 |
| MC145404DWR2 | F | 4X4 RS232 DRIVER/RECEIVER | 2 | 1000 | 1.462 | | |
| MC145404P | F | 4X4 RS232 DRIVER/RECEIVER | 2 | 18 | 2.88 | 504 | 1.64 |
| MC145405DW | F | 5X5 RS232 DRIVER/RECEIVER | 2 | 38 | 2.88 | 532 | 1.64 |
| MC145405DWR2 | F | 5X5 RS232 DRIVER/RECEIVER | 2 | 1000 | 1.462 | | |
| MC145405P | F | 5X3 RS232 DRIVER/RECEIVER | 2 | 18 | 2.88 | 504 | 1.64 |
| MC145406DW | F | RS232 DRIVER/RECEIVER | 1 | 47 | 2.13 | 611 | 1.22 |
| MC145406DWR2 | F | RS-232-C DRIVERS/RECEIVER | 1 | 1000 | 1.09 | | |

# CMOS & TELECOMM

| Type No. | Grp/Description | PC | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| | | | Qty | Price | Qty | Price |
| MC145406P | F RS-232 DRIVER/RECEIVER | 1 | 25 | 2.13 | 500 | 1.22 |
| MC145407DW | F RS232 DRVR/RCVR, 5V ONLY | 1 | 38 | 4.13 | 532 | 2.36 |
| MC145407DWR2 | F RS232 DRIVR/REC 5V ONLY | 2 | 1000 | 2.13 | | |
| MC145407P | F RS232, DRVR/RCVR, 5V ONLY | 1 | 18 | 4.13 | 504 | 2.36 |
| MC145408DW | F 5X3 TS232 DRIVER/RECEIVER | 2 | 31 | 3.18 | 527 | 1.82 |
| MC145408DWR2 | F 5X3 RS232 DRIVER/RECEIVER | 2 | 1000 | 1.61 | | |
| MC145408P | F 5X5 TS232 DRIVER/RECEIVER | 2 | 15 | 3.18 | 510 | 1.82 |
| MC14541BCL | L CMOS PROG. OSC-TIMER | 3 | 25 | 1.76 | | |
| MC14541BCP | L CMOS PROG. OSC-TIMER | 1 | 25 | .63 | 500 | .51 |
| MC14541BCPD | L CMOS PROG. OSC-TIMER | 3 | 25 | 1.80 | | |
| MC14541BD | L CMOS PROG. OSC-TIMER | 2 | 55 | .63 | 110 | .51 |
| MC14541BDR2 | L PROGRAMMABLE OSCIL-TIMER | 2 | 2500 | .67 | 5000 | .54 |
| MC145412P | F P/T DIALER | 1 | 21 | 8.50 | 504 | 4.86 |
| MC145413P | F P/T DIALER | N | 21 | 8.50 | 504 | 4.86 |
| MC145416P | F PULSE / TONE DIALER | U | 18 | 10.50 | | |
| MC145429P | F TELSET AUDIO INTERFACE TA | 3 | 21 | 6.82 | | |
| MC14543BCL | L CMOS BCD-TO-7SEG L/DE/DRV | 2 | 25 | 1.39 | 500 | 1.12 |
| MC14543BCP | L CMOS BCD-TO-7SEG L/DE/DRV | 1 | 25 | .63 | 500 | .51 |
| MC14543BCPD | L CMOS BCD-TO-7SEG L/DE/DRV | 3 | 25 | 1.80 | | |
| MC14543BD | L CMOS BCD-TO-7SEG L/DE/DRV | 2 | 48 | .63 | 96 | .51 |
| MC14543BDR2 | L BCD-TO-7 SEG LTH/DEC/DRI | 2 | 2500 | .67 | 5000 | .54 |
| MC145436DW | F I/C DTMF DECODER | 2 | 47 | 3.38 | 517 | 1.93 |
| MC145436P | F DTMF DECODER | 1 | 25 | 3.38 | 500 | 1.93 |
| MC14544BCP | L CMOS BCD 7-SEG LCD DRIVER | 2 | 21 | 3.33 | 42 | 2.11 |
| MC14544BCPD | L CMOS BCD 7-SEG LCD DRIVER | 3 | 21 | 6.33 | | |
| MC145442DW | F SINGLE CHIP 300BAUD MODEM | 2 | 38 | 10.63 | 532 | 6.08 |
| MC145442P | F SNGL CHP 300 BAUD MODEM | 2 | 18 | 10.63 | 504 | 6.08 |
| MC145443ADW | F MODEM BELL 103 | 2 | 38 | 10.63 | 532 | 6.08 |
| MC145443P | F SNGL CHP 300 BAUD MODEM | 1 | 18 | 10.63 | 504 | 6.08 |
| MC145444DW | F GAS TELEMETER MODEM | N | 38 | 12.63 | 532 | 7.22 |
| MC145444H | F GAS TELEMTER MODEM | N | 18 | 12.63 | 504 | 7.22 |
| MC145447DW | F CALLING LINE ID | 2 | 47 | 4.55 | 517 | 2.60 |
| MC145447P | F CALLING LINE ID | 2 | 25 | 4.55 | 500 | 2.60 |
| MC145453FN | F CMOS LCD 33-SEG DR SERIAL | 1 | 28 | 5.60 | 504 | 3.20 |
| MC145453FNN | F LCD 33-SEG SERIAL DRIVER | 2 | 28 | 5.60 | 504 | 3.20 |

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P = Proprietary Device
⚜ = Phoenix Program
* = First Time in Book
† = $200 Minimum Waived

# MICRO's

| | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| Type No. | Grp/Description | PC | Qty | Price | Qty | Price |
| MC68B00P | F 8 BIT MPU, 2.0 MHZ | 2 | 9 | 4.53 | | |
| MC68B03P | F 8 BIT MPU, 2 MHZ | 1 | 9 | 5.33 | | |
| MC68B09CP | F | 2 | 9 | 4.67 | | |
| MC68B09EP | F 8-BIT MPU W/EXTERNAL CLCK | 2 | 9 | 4.00 | | |
| MC68B21CP | F | 2 | 9 | 2.41 | | |
| MC68B40CP | F | 2 | 13 | 2.92 | | |
| MC68B44P | F DMAC PLASTIC 2.0 MHZ | 2 | 9 | 8.67 | | |
| MC68B45P | F CRT CONT. 2.0 MHZ | 2 | 9 | 3.67 | | |
| MC68B488P | F GPIA PLASTIC 2.0 MHZ | 2 | 9 | 14.67 | | |
| MC68B50CP | F ACIA | 2 | 15 | 2.00 | | |
| MC68B52P | F SSDA, PLASTIC 2.0 MHZ | 2 | 15 | 5.00 | | |
| MC68B54P | F ADLC, PLASTIC 2.0 MHZ | 2 | 13 | 3.73 | | |
| MC68B701S | F 8BIT EPROM MCU 2K 2.0MHZ | N | 9 | 18.85 | | |
| MC68EC000FN10 | G 8/16/32BIT EMBEDDED CTRL | Ⓜ | 19 | 5.75 | | |
| MC68EC000FN12 | G 8/16/32BIT EMBEDDED CTRL | Ⓜ | 19 | 7.10 | | |
| MC68EC000FN16 | G 8/16/32BIT EMBEDDED CTRL | Ⓜ | 19 | 8.95 | | |
| MC68EC000FN20 | G 8/16/32 BIT EMBEDDED CTRL | Ⓜ | 19 | 11.19 | | |
| MC68EC000FN8 | G 8/16/32-BIT EMBEDDED CTRL | Ⓜ | 19 | 4.58 | | |
| MC68EC000FU10 | G 8/16/32 BIT EMBEDDED CTAL | Ⓜ | 84 | 6.42 | | |
| MC68EC000FU12 | G 8/16/32 BIT EMBEDDED CTAL | Ⓜ | 84 | 7.74 | | |
| MC68EC000FU16 | G 8/16/32 BIT EMBEDDED CTAL | Ⓜ | 84 | 9.53 | | |
| MC68EC000FU8 | G 8/ 16 32BIT EMBEDDED CTAL | Ⓜ | 84 | 5.32 | | |
| MC68EC020FG16 | G 32-BIT EMBEDDED CTRL PQFP | Ⓜ | 66 | 17.63 | | |
| MC68EC020FG25 | G 32-BIT EMBEDDED CTRL PQFP | Ⓜ | 66 | 19.74 | | |
| MC68EC020RP16 | G 32-BIT EMBEDDED CTRL PPGA | Ⓜ | 1 | 41.90 | | |
| MC68EC020RP25 | G 32-BIT EMBEDDED CTRL PPGA | Ⓜ | 1 | 50.32 | | |
| MC68EC030FE25B | G 32BIT EMBEDDED CTRL CQFP | Ⓜ | 36 | 40.30 | | |
| MC68EC030FE40B | G 32BIT EMBEDDED CTRL CQFP | Ⓜ | 36 | 56.40 | | |
| MC68EC030RP25B | G 32BIT EMBEDDED CTRL PGA | Ⓜ | 1 | 51.58 | | |
| MC68EC030RP40B | G 32BIT EMBEDDED CTRL PGA | Ⓜ | 1 | 68.43 | | |
| MC68HCB34P | F 8-BIT MCU | 2 | 9 | 4.01 | | |
| MC68HCP11A0CFN3 | F AMCU-3MHZ DEVICE | Ⓜ | 24 | 7.71 | | |
| MC68HCP11A0FN | F 8-BIT MPU | Ⓜ | 24 | 6.89 | | |
| MC68HCP11A0P | F 8-BIT MPU | Ⓜ | 7 | 8.31 | | |
| MC68HCP11A1CFN3 | F AMCU-3MHZ DEVICE | N | 24 | 8.06 | | |
| MC68HCP11A1FN | F 8-BIT MCU, COP PROGRAMMED | Ⓜ | 24 | 7.19 | | |
| MC68HCP11A1P | F 8-BIT MCU, COP PROGRAMMED | Ⓜ | 7 | 8.61 | | |
| MC68HCP11E0FN | F 8-BIT MCU | Ⓜ | 24 | 7.83 | | |
| MC68HCP11E1FN | F 8-BIT MCU | Ⓜ | 24 | 8.19 | | |
| MC68HC000FN10 | G 16BITMPU HCMOS 10MHZ PLCC | 1 | 19 | 8.20 | 114 | 7.20 |
| MC68HC000FN12 | G 16BITMPU HCMOS 12MHZ PLCC | 1 | 19 | 8.80 | 114 | 8.20 |
| MC68HC000FN16 | G 16-BIT MPU HCMOS 16MHZ | 1 | 19 | 11.00 | 114 | 10.25 |
| MC68HC000FN8 | G 16BIT MPU HCMOS 8MHZ PLCC | 2 | 19 | 6.55 | 114 | 6.10 |
| MC68HC000P10 | G 16BIT MPU HCMOS 10MHZ PL | 2 | 6 | 9.35 | 30 | 8.80 |
| MC68HC000P12 | G 16BIT MPU HCMOS 12MHZ PL | 1 | 6 | 10.50 | 30 | 9.85 |

# MICRO's

| | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| **Type No.** | **Grp/Description** | **PC** | **Qty** | **Price** | **Qty** | **Price** |
| MC68HC000P16 | G 16-BIT MPU HCMOS16MHZ PL | 1 | 6 | 12.85 | 30 | 12.05 |
| MC68HC000P8 | G 16BIT MPU HCMOS 8MHZ PL | 1 | 6 | 8.20 | 30 | 7.70 |
| MC68HC11A0CFN3 | F AMCU-3MHZ DEVICE | Ⓜ | 24 | 7.71 | | |
| MC68HC11A0CP3 | F AMCU-3MHZ DEVICE | Ⓜ | 7 | 9.31 | | |
| MC68HC11A0FN | F 8-BIT MCU, NO ROM. NO E2 | Ⓜ | 24 | 6.89 | | |
| MC68HC11A0P | F 8-BIT MCU, NO ROM, NO E2 | Ⓜ | 7 | 8.31 | | |
| MC68HC11A1CFN3 | F AMCU-3MHZ DEVICE | Ⓜ | 24 | 8.06 | | |
| MC68HC11A1CP3 | F AMCU-3MHZ DEVICE | Ⓜ | 7 | 9.65 | | |
| MC68HC11A1FN | F 8-BIT MCU, NO ROM, PLCC | Ⓜ | 24 | 7.19 | | |
| MC68HC11A1P | F 8-BIT MCU, NO ROM, DIP | Ⓜ | 7 | 8.61 | | |
| MC68HC11D0CFB3 | F AMCU | Ⓜ | 480 | 4.60 | | |
| MC68HC11D0CFN3 | F AMCU | Ⓜ | 27 | 4.28 | | |
| MC68HC11D0CP3 | F AMCU | Ⓜ | 9 | 4.28 | | |
| MC68HC11D0FB | F MPG AMCU | Ⓜ | 480 | 4.11 | | |
| MC68HC11D0FN | F MPG AMCU | Ⓜ | 27 | 3.81 | | |
| MC68HC11D0P | F MPG AMCU | Ⓜ | 9 | 3.81 | | |
| MC68HC11ED0CFB2 | F AMCU | Ⓜ | 480 | 5.93 | | |
| MC68HC11ED0CFN2 | F AMCU | Ⓜ | 27 | 5.64 | | |
| MC68HC11ED0CP2 | F AMCU | Ⓜ | 9 | 5.64 | | |
| MC68HC11E0CFN3 | F AMCU-3MHZ DEVICE | Ⓜ | 24 | 8.77 | | |
| MC68HC11E0FN | F 8-BIT MCU, NO ROM, NO E2 | Ⓜ | 24 | 7.83 | | |
| MC68HC11E1CFN3 | F AMCU-3MHZ DEVICE | Ⓜ | 24 | 9.17 | | |
| MC68HC11E1FN | F 8-BIT MCU, NO ROM, PLCC | Ⓜ | 24 | 8.19 | | |
| MC68HC11F1CFN3 | F AMCU | Ⓜ | 19 | 9.93 | | |
| MC68HC11F1CFN4 | F AMCU | Ⓜ | 19 | 11.12 | | |
| MC68HC11KA0CFN3 | F AMCU | Ⓜ | 19 | 11.21 | | |
| MC68HC11KA0CFN4 | F AMCU | Ⓜ | 19 | 12.56 | | |
| MC68HC11KA1CFN3 | F AMCU | Ⓜ | 19 | 11.72 | | |
| MC68HC11KA1CFN4 | F AMC | Ⓜ | 19 | 13.13 | | |
| MC68HC11L0CFN2 | F 8-BIT AMCU | Ⓜ | 19 | 9.92 | | |
| MC68HC11L1CFN2 | F 8-BIT AMCU | Ⓜ | 19 | 10.37 | | |
| MC68HC24FN | F 8-BIT AMCU | 1 | 27 | 8.80 | | |
| MC68HC24P | F 8-BIT AMCU | 2 | 9 | 6.59 | | |
| MC68HC68T1DW | F CMOS SERIAL REAL-TIME CLK | 1 | 47 | 6.08 | 517 | 3.47 |
| MC68HC68T1DWR2 | F SERIAL REAL TIME CLOCK | 2 | 1000 | 2.75 | | |

Ⓜ = Motorola Blue Chip Program Device
N = Key New Motorola Device
R = Key "Focus" Motorola Device
U = Active/Non-Preferred Device

1 = Mature, Stable, High-Volume Device
2 = Moderate-Volume Device
3 = Low-Volume Device

# MICRO's

| Type No. | Grp/Description | PC | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| | | | Qty | Price | Qty | Price |
| MC68HC68T1P | F CMOS SERIAL REAL-TIME CLK | 1 | 25 | 6.08 | 500 | 3.47 |
| MC68HC705B5B | F | Ⓜ | 1 | 11.95 | | |
| MC68HC705B5CB | F | Ⓜ | 1 | 13.75 | | |
| MC68HC705B5CFN | F | Ⓜ | 24 | 13.75 | | |
| MC68HC705B5FN | F | Ⓜ | 24 | 11.95 | | |
| MC68HC705C8CFB | F CSIC MCU | Ⓜ | 96 | 13.95 | | |
| MC68HC705C8CFN | F 8-BIT MCU | Ⓜ | 27 | 12.95 | | |
| MC68HC705C8CP | F 8-BIT MCU | Ⓜ | 9 | 12.95 | | |
| MC68HC705C8CS | F 8-BIT MCU | 1 | 9 | 38.25 | | |
| MC68HC705C8FB | F CSIC MCU | Ⓜ | 96 | 12.95 | | |
| MC68HC705C8FN | F 8 BIT MCU | Ⓜ | 27 | 12.45 | | |
| MC68HC705C8P | F 8 BIT MCU | Ⓜ | 9 | 12.45 | | |
| MC68HC705C8S | F 8-BIT MCU | 1 | 9 | 33.25 | | |
| MC68HC705E1DW | F 8-BIT MCU | Ⓜ | 27 | 8.95 | | |
| MC68HC705E1P | F 8-BIT MCU | Ⓜ | 13 | 8.95 | | |
| MC68HC705J2CDW | F 8-BIT MCU | Ⓜ | 37 | 5.70 | | |
| MC68HC705J2CP | F 8-BIT MCU | Ⓜ | 18 | 5.70 | | |
| MC68HC705J2CS | F 8-BIT MCU | 2 | 19 | 22.94 | | |
| MC68HC705J2DW | F 8-BIT MCU | Ⓜ | 37 | 4.95 | | |
| MC68HC705J2P | F 8-BIT MCU | Ⓜ | 18 | 4.95 | | |
| MC68HC705J2S | F 8-BIT MCU | 2 | 19 | 19.95 | | |
| MC68HC711D3CFB2 | F AMCU | Ⓜ | 480 | 8.60 | | |
| MC68HC711D3CFN2 | F AMCU | Ⓜ | 27 | 8.31 | | |
| MC68HC711D3CFN3 | F AMCU | Ⓜ | 27 | 9.31 | | |
| MC68HC711D3CFS2 | F AMCU | Ⓜ | 27 | 14.04 | | |
| MC68HC711D3CP2 | F AMCU | Ⓜ | 9 | 8.31 | | |
| MC68HC711D3CS2 | F AMCU | Ⓜ | 9 | 14.04 | | |
| MC68HC711E9CFN2 | F 8-BIT AMCU | Ⓜ | 24 | 17.33 | | |
| MC68HC711E9CFN3 | F 8-BIT MCU | Ⓜ | 24 | 19.42 | | |
| MC68HC811E2FN | F MCU WITH 2K EEPROM | Ⓜ | 24 | 13.51 | | |
| MC68HC811E2P | F MCU WITH 2K EEPROM | Ⓜ | 7 | 13.51 | | |
| MC68L11A0FN2 | F AMCU | Ⓜ | 24 | 7.92 | | |
| MC68L11A1FN2 | F AMCU | Ⓜ | 24 | 8.27 | | |
| MC68L11D0FN2 | F AMCU | Ⓜ | 27 | 4.57 | | |
| MC68L11D0P2 | F AMCU | Ⓜ | 9 | 4.38 | | |
| MC68L11E0FN2 | F AMCU | Ⓜ | 24 | 9.01 | | |
| MC68L11E1FN2 | F AMCU | Ⓜ | 24 | 9.42 | | |
| MC68L11F1FN3 | F AMCU | Ⓜ | 19 | 11.41 | | |
| MC68L11KA0FN3 | F AMCU | Ⓜ | 19 | 12.90 | | |
| MC68L11KA1FN3 | F AMCU | Ⓜ | 19 | 13.48 | | |
| MC68L11K0FN3 | F AMCU | Ⓜ | 16 | 14.05 | | |
| MC68L11K1FN3 | F AMCU | Ⓜ | 16 | 14.78 | | |
| MC68SEC811E2FN | F 8-BIT MCU | Ⓜ | 24 | 16.37 | | |
| MC68SEC811E2P | F 8-BIT MCU | Ⓜ | 7 | 16.37 | | |
| MC680L | L HTL HEX INVERTER | 2 | 25 | 16.27 | 500 | 10.27 |

# MICRO's

| | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| Type No. | Grp/Description | PC | Qty | Price | Qty | Price |
| MC680P | L HTL HEX INVERTER | 1 | 25 | 15.13 | 500 | 9.56 |
| MC68000FN10 | G 16BIT MPU 10MHZ PLCC | 1 | 19 | 5.50 | 114 | 5.10 |
| MC68000FN12 | G 16BIT MPU 12MHZ PLCC | 1 | 19 | 6.50 | 114 | 6.05 |
| MC68000FN12F | G 16BIT MPU 16MHZ PLCC | 2 | 19 | 12.50 | 114 | 11.70 |
| MC68000FN8 | G 16BIT MPU 8MHZ PLCC | 2 | 19 | 4.49 | 114 | 4.19 |
| MC68000P10 | G 16BIT MPU 10MHZ PLAS PKG | 1 | 6 | 6.00 | 30 | 5.60 |
| MC68000P12 | G 16BIT MPU 12MHZ PLAS PKG | 1 | 6 | 7.05 | 30 | 6.55 |
| MC68000P12F | G 16BIT MPU PLAS PKG | 2 | 6 | 13.00 | 30 | 12.10 |
| MC68000P8 | G 16BIT MPU 8MHZ PLAS PKG | 1 | 6 | 5.00 | 30 | 4.69 |
| MC68000RC10 | G 16BIT MPU 10MHZ GOLD PGA | 2 | 21 | 29.35 | 105 | 27.40 |
| MC68000RC12 | G 16BIT MPU 12MHZ GOLD PGA | 2 | 21 | 30.55 | 105 | 28.50 |
| MC68000RC8 | G 16BIT MPU 8MHZ GOLD PGA | 2 | 21 | 28.15 | 105 | 26.25 |
| MC68000R10 | G 16BIT MPU 10MHZ PGA PKG | 2 | 21 | 29.35 | 105 | 27.40 |
| MC68008FN10 | G "NO NEW DESIGNS" | 1 | 23 | 7.30 | 115 | 6.80 |
| MC68008FN8 | G "NO NEW DESIGNS" | 2 | 23 | 6.10 | 115 | 5.70 |
| MC68008P10 | G "NO NEW DESIGNS" | 1 | 7 | 6.10 | 28 | 5.70 |
| MC68008P8 | G "NO NEW DESIGNS" | 1 | 7 | 4.89 | 28 | 4.56 |
| MC68010FN10 | G NO NEW DESIGNS | 2 | 19 | 23.50 | 114 | 21.95 |
| MC68010P10 | G NO NEW DESIGNS | 1 | 6 | 25.10 | 30 | 23.50 |
| MC68010P12 | G NO NEW DESIGNS | 2 | 6 | 39.25 | 30 | 36.80 |
| MC68010P8 | G NO NEW DESIGNS | 2 | 6 | 20.30 | 30 | 19.00 |
| MC68010RC10 | G "NO NEW DESIGNS" | 2 | 21 | 44.95 | 105 | 41.95 |
| MC68010RC12 | G "NO NEW DESIGNS" | 2 | 21 | 58.22 | 105 | 54.31 |
| MC68010RC8 | G "NO NEW DESIGNS" | 2 | 21 | 40.47 | 105 | 37.75 |
| MC68010R10 | G NO NEW DESIGN | 2 | 21 | 44.95 | 105 | 41.95 |
| MC6802P | F 8 BIT MPU W/CLK/RAM PLAS | 1 | 9 | 3.33 | | |
| MC68020FC16E | G 32-BIT MPU 16MHZ PQFP | Ⓜ | 36 | 38.00 | | |
| MC68020FC20E | G 32-BIT MPU 20MHZ PQFP | Ⓜ | 36 | 45.11 | | |
| MC68020FC25E | G 32-BIT MPU 25MHZ PQFP | Ⓜ | 36 | 49.80 | | |
| MC68020FC33E | G 32-BIT MPU 33MHZ PQFP | Ⓜ | 36 | 59.30 | | |
| MC68020FE16E | G NO NEW DESIGNS | 2 | 36 | 53.00 | | |
| MC68020FE20E | G NO NEW DESIGNS | 2 | 36 | 60.60 | | |
| MC68020FE25E | G NO NEWS DESIGNS | 2 | 36 | 67.80 | | |
| MC68020RC16E | G 32BIT MPU HCMOS 16MHZ PGA | Ⓜ | 1 | 125.80 | | |
| MC68020RC20E | G 32BIT MPU HCMOS 20MHZ PGA | Ⓜ | 1 | 135.48 | | |

A = Signal, Power, Communications
F = MOS D&A, DSP, AMCU/CSIC
G = MPU, RISC, FSRAM, DRAM
L = Linear, Logic, ASIC, DMO/MPO

P = Proprietary Device
🦅 = Phoenix Program
* = First Time in Book
† = $200 Minimum Waived

# MICRO's

| Type No. | Grp/Description | PC | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| | | | Qty | Price | Qty | Price |
| MC68020RC25E | G 32BIT HCMOS MPU 25MHZ PGA | Ⓜ | 1 | 144.43 | | |
| MC68020RC33E | G 32BIT MPU HCMOS 33MHZ PGA | Ⓜ | 1 | 165.80 | | |
| MC68020RP16E | G 32BIT MPU HCMOS 16MHZ PGA | Ⓜ | 1 | 54.42 | | |
| MC68020RP20E | G 32BIT MPU HCMOS 20MHZ PGA | Ⓜ | 1 | 55.79 | | |
| MC68020RP25E | G 32BIT MPU HCMOS 25MHZ PGA | Ⓜ | 1 | 57.90 | | |
| MC6803CP | F 8 BIT MPU, EXT. TEMP | N | 9 | 6.67 | | |
| MC6803U4CP | F | N | 9 | 8.75 | | |
| MC6803U4P | F 8-BIT MPU 6801U4 W/O ROM | N | 9 | 7.00 | | |
| MC68030FE16B | G 32-BIT MPU 16MHZ CQFP | Ⓜ | 36 | 62.90 | | |
| MC68030FE20B | G 32-BIT MPU 20MHZ CQFP | Ⓜ | 36 | 62.90 | | |
| MC68030FE25B | G 32-BIT MPU 25MHZ CQFP | Ⓜ | 36 | 79.66 | | |
| MC68030FE33B | G 32-BIT MPU 33MHZ CQFP | Ⓜ | 36 | 79.66 | | |
| MC68030RC16B | G 32BIT HCMOS MPU 16MHZ PGA | Ⓜ | 1 | 155.48 | | |
| MC68030RC20B | G 32BIT HCMOS MPU 20MHZ PGA | Ⓜ | 1 | 155.48 | | |
| MC68030RC25B | G 32BIT HCMOS MPU 25MHZ PGA | Ⓜ | 1 | 177.12 | | |
| MC68030RC33B | G 32BIT HCMOS MPU 33MHZ PGA | Ⓜ | 1 | 177.12 | | |
| MC68030RC40B | G 32BIT HCMOS MPU 40MHZ PGA | Ⓜ | 1 | 193.91 | | |
| MC68030RC50B | G 32BIT HCMOS MPU 50MHZ PGA | Ⓜ | 1 | 217.59 | | |
| MC68030RP16B | G 32BIT MPU 16MHZ PLAS PGA | Ⓜ | 1 | 82.11 | | |
| MC68030RP20B | G 32BIT MPU 20MHZ PLAS PGA | Ⓜ | 1 | 82.11 | | |
| MC68030RP25B | G 32BIT MPU 25MHZ PLAS PGA | Ⓜ | 1 | 100.22 | | |
| MC68030RP33B | G 32-BIT MPU 33MHZ PGA | Ⓜ | 1 | 100.22 | | |
| MC681L | L HTL HEX INVERTER O/C | 3 | 25 | 25.77 | | |
| MC681P | L HTL HEX INVERTER O/C | 2 | 25 | 15.13 | 500 | 9.56 |
| MC68150FN33 | L 25/33 MHZ BUS SIZER | N | 19 | 19.00 | 38 | 12.00 |
| MC68150FN40 | L 40 MHZ BUS SIZER | N | 19 | 20.13 | 38 | 12.72 |
| MC68185FN | G PLCC TPM | 2 | 1 | 8.80 | 25 | 8.25 |
| MC68185RC | G PGA TPM | 2 | 1 | 45.95 | 25 | 43.10 |
| MC68194FJ | L CARRIER BAND MODEM (CBM) | N | 1 | 133.34 | 5 | 84.21 |
| MC68195FN | G LOCAL TALK ADAPTOR | 2 | 1 | 5.53 | 16 | 5.19 |
| MC68230FN10 | G NO NEW DESIGNS | 1 | 23 | 6.40 | 115 | 6.00 |
| MC68230FN8 | G NO NEW DESIGNS | 2 | 23 | 4.82 | 115 | 4.50 |
| MC68230P10 | G NO NEW DESIGNS | 1 | 7 | 5.60 | 28 | 5.25 |
| MC68230P8 | G NO NEW DESIGNS | 1 | 7 | 4.02 | 28 | 3.75 |
| MC683L | L HTL QD 12/P EOR GATE | 3 | 25 | 20.09 | | |
| MC683P | L HTL QD 12/P EOR GATE | 3 | 25 | 19.88 | | |
| MC68302FC16C | G IMP PQFP (GULL WING) | Ⓜ | 36 | 32.95 | | |
| MC68302FC20C | G IMP PQFP (GULL WING) | Ⓜ | 36 | 35.95 | | |
| MC68302FC25C | G IMP PQFP (GULF WING) | Ⓜ | 36 | 44.94 | | |
| MC68302FE16C | G IMP CQFP (GULL WING) | Ⓜ | 36 | 42.44 | | |
| MC68302FE20C | G IMP CQFP (GULL WING) | Ⓜ | 36 | 53.06 | | |
| MC68302PV16C | G MPG HI-END-IMP TQFP | Ⓜ | 60 | 33.95 | | |
| MC68302PV20C | G MPG HIGH-END-IMP TQFP | Ⓜ | 60 | 36.95 | | |
| MC68302RC16C | G IMP PGA | Ⓜ | 1 | 94.05 | | |
| MC68302RC20C | G IMP PGA | Ⓜ | 1 | 118.00 | | |

# MICRO's

| Type No. | Grp/Description | PC | Per Unit Sugg. Resale Price |  |  |  |
|---|---|---|---|---|---|---|
|  |  |  | Qty | Price | Qty | Price |
| MC68302RC25C | G HIGH END MPU-IMP PGA | Ⓜ | 1 | 146.98 |  |  |
| MC68340FE16B | G INTEGRATED PROCESSOR DMA | Ⓜ | 24 | 25.49 |  |  |
| MC68340FE25B | G INTEGRATED PROCESSOR DMA | Ⓜ | 24 | 35.62 |  |  |
| MC68340RP16B | G INTEGRATED PROCESSOR DMA | Ⓜ | 1 | 36.58 |  |  |
| MC68340RP25B | G INTEGRATED PROCESSOR DMA | Ⓜ | 1 | 46.21 |  |  |
| MC68440FN10 | G NO NEW DESIGNS | 2 | 19 | 8.10 | 114 | 7.55 |
| MC68440FN8 | G NO NEW DESIGNS | 2 | 19 | 6.75 | 114 | 6.30 |
| MC68440P10 | G NO NEW DESIGNS | 2 | 6 | 8.10 | 30 | 7.55 |
| MC68440P8 | G NO NEW DESIGNS | 2 | 6 | 6.75 | 30 | 6.30 |
| MC68440R10 | G NO NEW DESIGNS | 2 | 21 | 41.15 | 105 | 38.40 |
| MC6845CP | F CRT CTRLR,EXT.TEMP,PLAS | 3 | 9 | 10.42 |  |  |
| MC68450L10 | G 4CH DMA CTL 10MHZ CER | 2 | 6 | 44.80 | 30 | 42.00 |
| MC68450L8 | G 4CH DMA CTL 8MHZ CER | 1 | 6 | 34.20 | 30 | 32.00 |
| MC68450RC10 | G 4CH DMA CTL 10MHZ PGA | 1 | 21 | 50.05 | 105 | 46.70 |
| MC68450R10 | G 4CH DMA CTL 10MHZ PGA | 1 | 21 | 50.05 | 105 | 46.70 |
| MC6847P | F VDG NON-INTERLACE, PLAS | 2 | 9 | 13.33 |  |  |
| MC68488CP | F GPIA | 2 | 9 | 18.33 |  |  |
| MC6852CP | F SSDA PLASTIC EXT TEMP | U | 15 | 4.97 |  |  |
| MC68605FN10 | G X.25 PRTCL CTL 10MHZ PLCC | 2 | 1 | 45.45 | 25 | 42.60 |
| MC68605RC10 | G X.25 PRTCL CTL 10MHZ PGA | 2 | 1 | 72.65 | 25 | 68.05 |
| MC68606FN12B | G MULTI-LINK LAPD PROTOCOL | 2 | 1 | 110.00 | 16 | 103.00 |
| MC68606FN16B | G MULTI-LINK LAPD PROTOCOL | 2 | 1 | 182.00 | 16 | 171.00 |
| MC68681FN | G DUART 68K BUS INT, PLCC | 1 | 27 | 5.00 | 108 | 4.69 |
| MC68681P | G DUART 68000 BUS INTERFACE | 1 | 9 | 5.00 | 27 | 4.69 |
| MC68701CS | F MPU WITH EPROM | 2 | 9 | 15.00 |  |  |
| MC68701CS-1 | F MPU WITH EPROM | 2 | 9 | 20.73 |  |  |
| MC68701S | F 8 BIT EPROM MCU 2K CERDIP | 1 | 9 | 13.64 |  |  |
| MC68701U4CS | F 8-BIT MCU | 2 | 9 | 27.51 |  |  |
| MC68701U4S | F 8-BIT MCU | 2 | 9 | 25.00 |  |  |
| MC68701U4S-1 | F 8-BIT MCU | 1 | 9 | 27.64 |  |  |
| MC68705P3S | F 8 BIT EPROM MCU W/2K | 1 | 13 | 9.95 | 1001 | 9.30 |
| MC68705P5S | F 8 BIT EPROM W/SECURITY | 1 | 13 | 15.20 |  |  |
| MC68705R3P | F 8-BIT EPROM MCU | 1 | 9 | 9.45 |  |  |
| MC68705R3S | F 8 BIT EPROM MCU W/3.7K | 1 | 9 | 14.80 | 1008 | 13.85 |
| MC68705R5S | F 8 BIT EPROM W/SECURITY | 2 | 9 | 21.20 |  |  |

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R = Key "Focus" Motorola Device
U = Active/Non-Preferred Device

1 = Mature, Stable, High-Volume Device
2 = Moderate-Volume Device
3 = Low-Volume Device

# CMOS LOGIC

| | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| Type No. | Grp/Description | PC | Qty | Price | Qty | Price |
| MC74HC165DR2 | L 8BIT SER-IN/PAR-OUT SHIFT | 2 | 2500 | .56 | 5000 | .45 |
| MC74HC165N | L HSL 8-BIT SI/PO S/R | 1 | 25 | .50 | 500 | .41 |
| MC74HC165ND | L HSL 8-BIT SI/PO S/R | 3 | 25 | 1.52 | | |
| MC74HC173D | L HSL QUAD 3-ST D-FF | 2 | 48 | .63 | 96 | .51 |
| MC74HC173N | L HSL QUAD 3-ST D-FF | 2 | 25 | .63 | 500 | .51 |
| MC74HC174AD | L FLIP/FLOP HEX D W/CLOCK | 2 | 48 | .49 | 96 | .39 |
| MC74HC174ADR2 | L FLIP/FLOP HEX D W/CLOCK | 2 | 2500 | .50 | 5000 | .41 |
| MC74HC174AN | L FLIP/FLOP HEX D W/CLOCK | 1 | 25 | .45 | 500 | .36 |
| MC74HC174AND | L FLIP/FLOP HEX D W/CLOCK | 3 | 25 | 1.40 | | |
| MC74HC175D | L HSL QUAD D-FF | 2 | 48 | .50 | 96 | .41 |
| MC74HC175DR2 | L HSL QD D-FF CLK/RESET | 2 | 2500 | .52 | 5000 | .42 |
| MC74HC175N | L HSL QUAD D-FF | 1 | 25 | .47 | 500 | .38 |
| MC74HC175ND | L HSL QUAD D-FF | 3 | 25 | 1.44 | | |
| MC74HC194N | L HSL 4-BIT BIDIRECTUNIVS/R | 2 | 25 | .63 | 500 | .51 |
| MC74HC195N | L HSL 4-BIT UNIV. S/R | 2 | 25 | .63 | 500 | .51 |
| MC74HC20D | L HSL DUAL 4-I NAND GATE | U | 55 | .40 | | |
| MC74HC20DR2 | L HSL DUAL 4-INPT NAND GATE | U | 2500 | .41 | | |
| MC74HC20N | L HSL DUAL 4-I NAND GATE | 1 | 25 | .36 | 500 | .29 |
| MC74HC20ND | L HSL DUAL 4-I NAND GATE | 3 | 25 | 1.20 | | |
| MC74HC237D | L HSL 1-OF-8 DEC/DEMUX/LAT | U | 48 | .70 | | |
| MC74HC237DR2 | L HSL 1-OF-8 DEC/DEMUX/LAT | U | 2500 | .72 | | |
| MC74HC237N | L HSL 1-OF-8 DEC/DEMUX/LAT | 1 | 25 | .67 | 500 | .54 |
| MC74HC240ADW | L HSL OCTAL 3-ST DRVR | 2 | 38 | .67 | 76 | .54 |
| MC74HC240ADWR2 | L OCTAL BUF/LINE DRV | U | 1000 | .68 | | |
| MC74HC240AN | L HSL OCTAL 3-ST DRVR | 1 | 18 | .63 | 360 | .51 |
| MC74HC240AND | L HSL OCTAL 3-ST DRVR | 3 | 18 | 1.80 | | |
| MC74HC241ADW | L HSL OCTAL 3-ST DRVR | 2 | 38 | .67 | 76 | .54 |
| MC74HC241ADWR2 | L HSL OCTL 3-ST DRVR | U | 1000 | .68 | | |
| MC74HC241AN | L HSL OCTAL 3-ST DRVR | 2 | 18 | .63 | 360 | .51 |
| MC74HC241AND | L HSL OCTAL 3-ST DRVR | 3 | 18 | 1.80 | | |
| MC74HC244ADW | L HSL OCTAL 3-ST DRVR | 1 | 38 | .67 | 76 | .54 |
| MC74HC244ADWR2 | L QUAD 3SIN-INV BFR/LN DRVR | 2 | 1000 | .68 | 2000 | .55 |
| MC74HC244AN | L HSL OCTAL 3-ST DRVR | 1 | 18 | .63 | 360 | .51 |
| MC74HC244AND | L HSL OCTAL 3-ST DRVR | 3 | 18 | 1.80 | | |
| MC74HC245ADW | L HSL OCTAL 3-ST BUS TRANSC | 2 | 38 | .68 | 76 | .55 |
| MC74HC245ADWR2 | L HSL OCT 3-S N-INV BUSTRAN | 2 | 1000 | .70 | 2000 | .57 |
| MC74HC245AN | L HSL OCTAL 3-ST BUS TRANSC | 1 | 18 | .65 | 360 | .52 |
| MC74HC245AND | L HSL OCTAL 3-ST BUS TRANSC | 3 | 18 | 1.84 | | |
| MC74HC251D | L HSL 8-I 3-ST DATA SEL/MUX | 2 | 48 | .52 | 96 | .42 |
| MC74HC251DR2 | L HSL 8-1 3-ST DATA SEL/MUX | U | 2500 | .54 | | |
| MC74HC251N | L HSL 8-I 3-ST DATA SEL/MUX | 1 | 25 | .49 | 500 | .39 |
| MC74HC253D | L HSL DUAL 4-I 3-ST MUX | 2 | 48 | .52 | 96 | .42 |
| MC74HC253DR2 | L HSL DUAL 4-1 3-ST MUX | U | 2500 | .54 | | |
| MC74HC253N | L HSL DUAL 4-I 3-ST MUX | 2 | 25 | .49 | 500 | .39 |
| MC74HC257D | L HSL QUAD 2-I DATA SEL/MUX | 2 | 48 | .52 | 96 | .42 |

# CMOS LOGIC

| Type No. | Grp/Description | | PC | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|---|
| | | | | Qty | Price | Qty | Price |
| MC74HC257DR2 | L | QUAD 2-IN MUX | 2 | 2500 | .54 | 5000 | .44 |
| MC74HC257N | L | HSL QUAD 2-I DATA SEL/MUX | 1 | 25 | .49 | 500 | .39 |
| MC74HC257ND | L | HSL QUAD 2-I DATA SEL/MUX | 3 | 25 | 1.48 | | |
| MC74HC259D | L | HSL 8-BIT LATCH/DECODER | 2 | 48 | .72 | 96 | .58 |
| MC74HC259DR2 | L | 8-BIT ADDRESS-LTCH | 2 | 2500 | .76 | 5000 | .61 |
| MC74HC259N | L | HSL 8-BIT LATCH/DECODER | 1 | 25 | .72 | 500 | .58 |
| MC74HC259ND | L | HSL 8-BIT LATCH/DECODER | 3 | 25 | 1.88 | | |
| MC74HC27D | L | HSL TRIPLE 3-I NOR GATE | U | 55 | .40 | | |
| MC74HC27DR2 | L | HSL TRIPLE 3-1 NOR GATE | U | 2500 | .41 | | |
| MC74HC27N | L | HSL TRIPLE 3-I NOR GATE | 2 | 25 | .36 | 500 | .29 |
| MC74HC27ND | L | HSL TRIPLE 3-I NOR GATE | 3 | 25 | 1.20 | | |
| MC74HC273ADW | L | OCTL D-TYPE FLIP/FLOP | 1 | 38 | .67 | 76 | .54 |
| MC74HC273ADWR2 | L | OCTAL D-TYPE FLIP/FLOP | 2 | 1000 | .68 | 2000 | .55 |
| MC74HC273AN | L | OCTL D-TYPE FLIP/FLOP | 1 | 18 | .63 | 360 | .51 |
| MC74HC273AND | L | OCTL D-TYPE FLIP/FLOP | 3 | 18 | 1.80 | | |
| MC74HC280D | L | HSL 9-BIT PARITY GEN/CHK | 2 | 55 | 1.17 | 110 | .94 |
| MC74HC280N | L | HSL 9-BIT PARITY GEN/CHK | 2 | 25 | 1.17 | 500 | .94 |
| MC74HC299DW | L | HSL 8-BIT PARITY GEN/CHK | 2 | 38 | 1.35 | 76 | 1.09 |
| MC74HC299N | L | HSL 8BIT BIDIRECT UNIVS/R | 2 | 18 | 1.35 | 360 | 1.09 |
| MC74HC299ND | L | HSL 8BIT BIDIRECT UNIVS/R | 3 | 18 | 2.97 | | |
| MC74HC30D | L | HSL 8-I NAND GATE | 2 | 55 | .40 | 110 | .32 |
| MC74HC30DR2 | L | 8-IN NAND GATE | U | 2500 | .41 | | |
| MC74HC30N | L | HSL 8-I NAND GATE | 1 | 25 | .36 | 500 | .29 |
| MC74HC30ND | L | HSL 8-I NAND GATE | 3 | 25 | 1.20 | | |
| MC74HC32AD | L | 2-I, QUAD OR GATE | 1 | 55 | .40 | 110 | .32 |
| MC74HC32ADR2 | L | QUAD, 2-INPUT OR GATE | 2 | 2500 | .41 | 5000 | .33 |
| MC74HC32AN | L | 2-I, QUAD OR GATE | 1 | 25 | .36 | 500 | .29 |
| MC74HC32AND | L | 2-I, QUAD OR GATE | 3 | 25 | 1.20 | | |
| MC74HC365N | L | HSL HEX 3-ST BUFFER | 2 | 25 | .63 | 500 | .51 |
| MC74HC365ND | L | HSL HEX 3-ST BUFFER | 3 | 25 | 1.80 | | |
| MC74HC366N | L | HSL HEX 3-ST BUFFER | U | 500 | .63 | | |
| MC74HC367N | L | HSL HEX 3-ST BUFFER | 2 | 25 | .63 | 500 | .51 |
| MC74HC368N | L | HSL HEX 3-ST BUFFER | 2 | 25 | .63 | 500 | .51 |
| MC74HC373ADW | L | OCT TRANSP LTCH 3-ST | 1 | 38 | .67 | 76 | .54 |
| MC74HC373ADWR2 | L | OCTL 3-ST LTCH,NONINVRT | 2 | 1000 | .68 | 2000 | .55 |

Ⓜ = Motorola Blue Chip Program Device
N = Key New Motorola Device
R = Key "Focus" Motorola Device
U = Active/Non-Preferred Device

1 = Mature, Stable, High-Volume Device
2 = Moderate-Volume Device
3 = Low-Volume Device

# SENSORS

| | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| Type No. | Grp/Description | PC | Qty | Price | Qty | Price |
| MPX2700AP | A PRES SEN ABS ELEMENT | N | 1 | 15.95 | 100 | 13.75 |
| MPX2700AS | A PRES SEN ABS ELEMENT | N | 1 | 15.95 | 100 | 13.75 |
| MPX2700ASX | A PRES SEN ABS ELEMENT | N | 1 | 15.95 | 100 | 13.75 |
| MPX2700D | A PRES SEN ABS ELEMENT | N | 25 | 15.23 | 100 | 13.13 |
| MPX2700DP | A PRES SEN ABS ELEMENT | N | 20 | 16.68 | 100 | 14.38 |
| MPX2700GP | A PRES SEN ABS ELEMENT | N | 1 | 15.95 | 100 | 13.75 |
| MPX2700GS | A PRES SEN ABS ELEMENT | N | 1 | 15.95 | 100 | 13.75 |
| MPX2700GSX | A PRES SEN ABS ELEMENT | N | 1 | 15.95 | 100 | 13.75 |
| MPX2700GVP | A PRES SEN ABS ELEMENT | N | 1 | 15.95 | 100 | 13.75 |
| MPX2700GVS | A PRES SEN ABS ELEMENT | N | 1 | 15.95 | 100 | 13.75 |
| MPX2700GVSX | A PRES SEN ABS ELEMENT | N | 1 | 15.95 | 100 | 13.75 |
| MPX4100A | A PRES SEN MAP ELEMENT | N | 1 | 17.40 | 100 | 15.00 |
| MPX4100AP | A PRES SEN MAP PORT | N | 1 | 18.13 | 100 | 15.63 |
| MPX4100ASX | A PRES SEN MAP AXL PORT | N | 1 | 18.13 | 100 | 15.63 |
| MPX4101A | A PRES SEN MAP 15-102 KPA | N | 25 | 17.40 | 100 | 15.00 |
| MPX4101AP | A PRES SEN MAP PORT | N | 20 | 18.13 | 100 | 15.63 |
| MPX4101ASX | A PRES SEN MAP AXL PORT | N | 20 | 18.13 | 100 | 15.63 |
| MPX4115A | A PRES SEN BAP ELEMENT | N | 1 | 17.40 | 100 | 15.00 |
| MPX4115AP | A PRES SEN BAP PORT | N | 1 | 18.13 | 100 | 15.63 |
| MPX4115AS | A PRES SEN BAP AXL PORT | N | 1 | 18.13 | 100 | 15.63 |
| MPX4115ASX | A PRES SEN BAP AXL PORT | N | 1 | 18.13 | 100 | 15.63 |
| MPX4250A | A INTGR 250 KPA (TUR BOOST) | N | 25 | 17.40 | 100 | 15.00 |
| MPX4250AP | A INTGR 250 KPA (TUR BOOST) | N | 20 | 18.13 | 100 | 15.63 |
| MPX4250AS | A INTGR 250 KPA (TUR BOOST) | N | 20 | 18.13 | 100 | 15.63 |
| MPX4250ASX | A INTGR 250 KPA (TUR BOOST) | N | 20 | 18.13 | 100 | 15.63 |
| MPX50D | A PRES SEN DIFF ELEMENT | N | 25 | 5.44 | 100 | 4.69 |
| MPX50DP | A PRES SEN DIFF DUAL PORT | N | 20 | 6.89 | 100 | 5.94 |
| MPX50GP | A PRES SEN DIFF GAGE PORT | 2 | 20 | 6.16 | 100 | 5.31 |
| MPX50GS | A PRES SEN AXL GAGE PORT | N | 20 | 6.16 | 100 | 5.31 |
| MPX50GSX | A PRES SEN AXL GAGE PORT | 2 | 20 | 6.16 | 100 | 5.31 |
| MPX50GVP | A PRES SEN DIFF VAC PORT | 2 | 20 | 6.16 | 100 | 5.31 |
| MPX50GVS | A PRES SEN AX GAGE VAC PORT | N | 20 | 6.16 | 100 | 5.31 |
| MPX50GVSX | A PRES SEN AX GAGE VAC PORT | 2 | 20 | 6.16 | 100 | 5.31 |
| MPX5050D | A PRES SEN INTEG 7 PSI, 4V | 2 | 25 | 17.50 | 100 | 11.05 |
| MPX5050DP | A PRES SEN INTEG 7 PSI,4V | 2 | 20 | 19.17 | 100 | 12.10 |
| MPX5050GP | A PRES SEN INTEG 7 PSI,4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5050GS | A PRES SEN INTEG 7 PSI, 4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5050GSX | A PRES SEN INTEG -7PSI, 4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5050GVP | A PRES SEN INTEG -7PSI, 4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5050GVS | A PRES SEN INTEG -7PSI, 4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5050GVSX | A PRES SEN INTEG 7 PSI,4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5100A | A PRES SEN INTEG 15 PSI 4V | 2 | 25 | 17.50 | 100 | 11.05 |
| MPX5100AP | A PRES SEN INTEG 15 PSI 4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5100ASX | A PRES SEN INTEG 15 PSI 4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5100D | A PRES SEN INTEG 15 PSI 4V | 2 | 25 | 17.50 | 100 | 11.05 |

# SENSORS

| Type No. | Grp/Description | PC | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| | | | Qty | Price | Qty | Price |
| MPX5100DP | A PRES SEN INTEG 15 PSI 4V | 2 | 20 | 19.17 | 100 | 12.10 |
| MPX5100GP | A PRES SEN INTEG 15 PSI 4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5100GS | A PRES SEN INTEG 15 PSI 4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5100GSX | A PRES SEN INTEG 15 PSI 4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5100GVP | A PRES SEN INTEG 15 PSI 4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5100GVS | A PRES SEN INTEG 15 PSI 4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX5100GVSX | A PRES SEN INTEG 15 PSI 4V | 2 | 20 | 18.33 | 100 | 11.58 |
| MPX52D | A PRES SEN DIFF ELEMENT | U | 25 | 14.07 | | |
| MPX52DP | A PRES SEN DIFF DUAL PORT | U | 20 | 16.97 | | |
| MPX52GP | A PRES SEN DIFF GAGE PORT | U | 20 | 15.52 | | |
| MPX52GVP | A PRES SEN DIFF VAC PORT | U | 20 | 15.52 | | |
| MPX700A | A PRESS SENSOR | N | 20 | 5.08 | 100 | 4.38 |
| MPX700AP | A PRESS SENSOR | N | 20 | 5.80 | 100 | 5.00 |
| MPX700AS | A | N | 20 | 5.80 | 100 | 5.00 |
| MPX700ASX | A | N | 20 | 5.80 | 100 | 5.00 |
| MPX700D | A PRES SEN DIFF ELEMENT | 2 | 25 | 5.08 | 100 | 4.38 |
| MPX700DP | A PRES SEN DIFF DUAL PORT | 2 | 20 | 6.53 | 100 | 5.63 |
| MPX700GP | A PRES SEN DIFF VAC PORT | 2 | 20 | 5.80 | 100 | 5.00 |
| MPX700GS | A PRES SEN AXL GAGE PORT | 2 | 20 | 5.80 | 100 | 5.00 |
| MPX700GSX | A PRES SEN AXL GAGE PORT | 2 | 20 | 5.80 | 100 | 5.00 |
| MPX700GVP | A PRES SEN DIFF VAC PORT | 2 | 20 | 5.80 | 100 | 5.00 |
| MPX700GVS | A PRES SEN AX GAGE VAC PORT | 2 | 20 | 5.80 | 100 | 5.00 |
| MPX700GVSX | A PRES SEN AX GAGE VAC PORT | 2 | 20 | 5.80 | 100 | 5.00 |
| MPX7050D | A PRES SEN HI Z ELEMENT | N | 25 | 10.88 | 100 | 9.38 |
| MPX7050DP | A PRES SEN HI Z DUAL PORT | N | 20 | 12.33 | 100 | 10.63 |
| MPX7050GP | A PRES SEN HI Z GAGE PORT | N | 20 | 11.46 | 100 | 9.88 |
| MPX7050GS | A PRES SEN HI Z GAGE PORT | N | 20 | 11.46 | 100 | 9.88 |
| MPX7050GSX | A PRES SEN HIZ AX PCMT PORT | N | 20 | 11.46 | 100 | 9.88 |
| MPX7050GVP | A PRES SEN HI Z VAC PORT | N | 20 | 11.46 | 100 | 9.88 |
| MPX7050GVS | A PRES SEN HI Z AX GAG PORT | N | 20 | 11.46 | 100 | 9.88 |
| MPX7050GVSX | A PRES SEN HI Z AX VAC PCMT | N | 20 | 11.46 | 100 | 9.88 |
| MPX7100A | A PRES SEN HI Z ABS ELEMENT | N | 25 | 10.88 | 100 | 9.38 |
| MPX7100AP | A PRES SEN HI Z ABS PORT | N | 20 | 11.46 | 100 | 9.88 |
| MPX7100ASX | A PRES SEN HIZ ABS AXL PORT | N | 20 | 11.46 | 100 | 9.88 |
| MPX7100D | A PRES SEN HI Z ELEMENT | N | 25 | 10.88 | 100 | 9.38 |

**A** = Signal, Power, Communications
**F** = MOS D&A, DSP, AMCU/CSIC
**G** = MPU, RISC, FSRAM, DRAM
**L** = Linear, Logic, ASIC, DMO/MPO

**P** = Proprietary Device
🦅 = Phoenix Program
* = First Time in Book
† = $200 Minimum Waived

# TMOS POWER

| | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| Type No. | Grp/Description | PC | Qty | Price | Qty | Price |
| MTM8N20 | A TMOSPWR 200V.40R T03 | 3 | 100 | 4.97 | | |
| MTM8N40 | A TMOSPWR 400V.55R T03 | 2 | 100 | 6.85 | 1000 | 5.30 |
| MTP1N100E | A TMOS PWR FET 1000V 9.000H | N | 50 | 3.90 | 500 | 3.02 |
| MTP1N45 | A TMOSPWR 450V8.0R T0220 | 3 | 50 | 1.68 | | |
| MTP1N50 | A TMOSPWR 500V8.0R T0220 | 3 | 50 | 2.69 | | |
| MTP1N55 | A TMOSPWR 550V12.0R T0220 | 2 | 50 | .98 | 500 | .76 |
| MTP1N60E | A TMOS PWR FET 600 V 8 OHMS | N | 50 | .96 | 500 | .74 |
| MTP10N06E | A TMOSPWR 60V .25R T0220 | 3 | 50 | 2.07 | | |
| MTP10N10E | A TMOSPWR 100V .25R T0220 | 2 | 50 | 1.14 | 500 | .88 |
| MTP10N10M | A TMOSPWR100V .25R SENSEFET | 2 | 50 | 2.32 | 100 | 1.80 |
| MTP10N15 | A TMOSPWR 150V.30R T0220 | 2 | 50 | 2.14 | 500 | 1.66 |
| MTP10N15L | A TMOSPWR 150V .3R T0220 | 2 | 50 | 2.32 | 500 | 1.80 |
| MTP10N40E | A TMOSPWR 400V .55R T0220 | N | 50 | 2.54 | 500 | 1.97 |
| MTP12N05E | A TMOSPWR 50V .12R T0220 | 3 | 50 | 1.40 | | |
| MTP12N08L | A TMOSPWR 80V .2R T0220 | 3 | 50 | 3.18 | | |
| MTP12N10E | A TMOS PWR 0.16R 100V T0220 | N | 50 | 1.40 | 500 | 1.09 |
| MTP12N10L | A TMOSPWR 100V .2R T0220 | 2 | 50 | 2.16 | 500 | 1.67 |
| MTP12N20 | A TMOSPWR 200V.35R T0220 | 2 | 50 | 2.00 | 500 | 1.55 |
| MTP12P05 | A TMOSPWR 50V.30R T0220 | 2 | 50 | 3.12 | 500 | 2.42 |
| MTP12P06 | A TMOSPWR 60V.30R T0220 | 2 | 50 | 3.64 | 500 | 2.82 |
| MTP12P10 | A TMOSPWR 100V.30R T0220 | 2 | 50 | 4.20 | 500 | 3.26 |
| MTP15N05E | A TMOSPWR 50V 0.12R T0220 | 2 | 50 | 1.16 | 1000 | .90 |
| MTP15N05EL | A TMOS PWR FET 15A 50V | N | 50 | 1.36 | 1000 | 1.05 |
| MTP15N06E | A TMOSPWR 60V .15R T0220 | 2 | 50 | 1.20 | 500 | .93 |
| MTP15N06L | A TMOSPWR 60V .15R T0220 | 3 | 50 | 2.86 | | |
| MTP15N08L | A TMOSPWR 80V .135R T0220 | 3 | 50 | 3.48 | | |
| MTP15N15 | A TMOSPWR 150V.25R T0220 | 3 | 50 | 5.97 | | |
| MTP2N20 | A TMOSPWR 200V1.8R T0220 | 2 | 50 | .74 | 500 | .57 |
| MTP2N40 | A TMOSPWR 400V5.0R T0220 | 3 | 50 | 2.17 | | |
| MTP2N60E | A TMOS PWR 3.8R 600V T0220 | 2 | 50 | 1.58 | 1000 | 1.22 |
| MTP2N85 | A TMOSPWR 850V8.0R T0220 | 2 | 50 | 4.42 | 500 | 3.43 |
| MTP2N90 | A TMOSPWR 900V8.0R T0220 | 2 | 50 | 5.05 | 500 | 3.91 |
| MTP2P50E | A TMOS PWR FET 500V,6.000HM | N | 50 | 3.44 | 500 | 2.67 |
| MTP20N06 | A TMOS PWR 0.085R 60V T0220 | 2 | 50 | 1.46 | 500 | 1.13 |
| MTP20N10E | A TMOSPWR 100V .15R T0220 | 2 | 50 | 2.10 | 500 | 1.63 |
| MTP20N20E | A TMOS PWR FET 200V | N | 50 | 4.20 | 500 | 3.26 |
| MTP23P06 | A TMOS PWR 0.12R 60V P-CHAN | 1 | 50 | 3.76 | 500 | 2.91 |
| MTP25N05E | A TMOSPWR 50V .07R T0220 | 2 | 50 | 1.96 | 1000 | 1.52 |
| MTP25N06E | A TMOSPWR 60V .08R T0220 | 3 | 50 | 3.38 | | |
| MTP25N10E | A TMOSPWR 100V .075R T0220 | 1 | 50 | 3.68 | 500 | 2.85 |
| MTP2955E | A TMOSPWR 60V, 12A P-CHAN | N | 50 | 1.56 | 500 | 1.21 |
| MTP3N100E | A TMOSPWR 1000V 4.0R T0220 | N | 50 | 5.00 | 500 | 3.88 |
| MTP3N50E | A TMOSPWR 500V 3.0R T0220 | 1 | 50 | 1.40 | 500 | 1.09 |
| MTP3N60E | A TMOSPWR 600V .5R T0220 | 2 | 50 | 1.98 | 1000 | 1.53 |
| MTP3N80 | A TMOSPWR 800V7.0R T0220 | 2 | 50 | 4.42 | 500 | 3.43 |

# TMOS POWER

| | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| Type No. | Grp/Description | PC | Qty | Price | Qty | Price |
| MTP30N06EL | A TMOS PWR 0.050R 60V T0220 | 2 | 50 | 2.58 | 500 | 2.00 |
| MTP30N08M | A TMOSPWR80V .065R SENSEFET | 2 | 50 | 3.92 | 100 | 3.04 |
| MTP3055E | A TMOSPWR 60V .15R T0220 | 1 | 50 | .84 | 500 | .65 |
| MTP3055EL | A TMOSPWR 60V .18R T0220 | 1 | 50 | .92 | 1000 | .71 |
| MTP33N10E | A SPP PWR NCHAN | N | 50 | 4.60 | 500 | 3.57 |
| MTP36N06E | A TMOS PWR 0.04R 60V T0220 | 2 | 50 | 1.96 | 1000 | 1.52 |
| MTP4N40E | A TMOS PWR 1.8R 400V T0220 | 2 | 50 | 1.28 | 500 | .99 |
| MTP4N50E | A TMOSPWR 500V 1.5R T0220 | 2 | 50 | 1.90 | 1000 | 1.47 |
| MTP4N80E | A TMOSPWR 800V 3.0R T0220 | 2 | 50 | 4.04 | 1000 | 3.13 |
| MTP4N85 | A TMOSPWR 850V 5.0R T0220 | 2 | 50 | 7.35 | 500 | 5.70 |
| MTP4N90 | A TMOSPWR 900V 5.0R T0220 | 2 | 50 | 8.05 | 500 | 6.20 |
| MTP40N06M | A TMOSPWR 60V .04R SENSEFET | 1 | 50 | 3.92 | 100 | 3.04 |
| MTP5N06 | A TMOSPWR 60V.60R T0220 | 3 | 50 | 1.28 | | |
| MTP5N20 | A TMOSPWR 200V1.0R T0220 | 2 | 50 | .92 | 500 | .71 |
| MTP5N40E | A TMOSPWR 400V 1.0R T0220 | N | 50 | 1.90 | 500 | 1.47 |
| MTP5P25 | A TMOS PWR 250V 3.0R T0220 | N | 50 | 2.60 | 1000 | 2.02 |
| MTP50N05E | A TMOSPWR 50V .028R T0220 | 1 | 50 | 1.86 | 500 | 1.44 |
| MTP50N05EL | A TMOSPWR 50V .032R T0220 | 2 | 50 | 4.28 | 500 | 3.32 |
| MTP50N06E | A TMOSPWR 60V 0.025R T0220 | 2 | 50 | 3.00 | 500 | 2.33 |
| MTP50N06EL | A TMOS PWR 0.028R 60V T0220 | 2 | 50 | 4.50 | 2500 | 3.49 |
| MTP6N10 | A TMOSPWR 100V.60R T0220 | 3 | 50 | 3.64 | | |
| MTP6N60E | A TMOSPWR 600V 1.2R T0220 | 2 | 50 | 4.00 | 1000 | 3.10 |
| MTP6P20E | A TMOS POWER T0220 | 2 | 50 | 2.60 | 1000 | 2.02 |
| MTP60N06HD | A TMOS PWR FET 60V,0.014OHM | N | 50 | 4.00 | 1000 | 3.10 |
| MTP7N20 | A TMOSPWR 200V.70R T0220 | 3 | 50 | 2.24 | | |
| MTP75N05HD | A TMOS PWR FET 75A 50V | 2 | 50 | 5.70 | 1000 | 4.42 |
| MTP8N20 | A TMOSPWR 200V.40R T0220 | 2 | 50 | 1.56 | 500 | 1.21 |
| MTP8N50E | A TMOSPWR 500V .8R T0220 | 1 | 50 | 2.64 | 500 | 2.05 |
| MTP8P10 | A TMOSPWR 100V.40R T0220 | 1 | 50 | 4.06 | 500 | 3.15 |
| MTP8P20 | A TMOSPWR 200V .4R T0220 | 2 | 50 | 4.20 | 500 | 3.26 |
| MTS102 | A TEMP SENSOR, TO-92 | 2 | 1 | .22 | 100 | .19 |
| MTS103 | A TEMP SENSOR, TO-92 | U | 1 | .61 | | |
| MTS105 | A TEMP SENSOR, TO-92 | 2 | 1 | .22 | 100 | .19 |
| MTW10N40E | A TMOS PWR 0.55R 400V T0247 | N | 30 | 5.64 | 300 | 4.37 |
| MTW14N50E | A TMOS PWR 0.32R 500V T0247 | 1 | 30 | 9.84 | 300 | 7.63 |

**A** = Signal, Power, Communications
**F** = MOS D&A, DSP, AMCU/CSIC
**G** = MPU, RISC, FSRAM, DRAM
**L** = Linear, Logic, ASIC, DMO/MPO

**P** = Proprietary Device
**✤** = Phoenix Program
***** = First Time in Book
**†** = $200 Minimum Waived

# TTL

| | | | Per Unit Sugg. Resale Price | | | |
|---|---|---|---|---|---|---|
| Type No. | Grp/Description | PC | Qty | Price | Qty | Price |
| SN54LS365AJ | L LS 3-STATE HEX BUFFERS | 3 | 25 | 2.04 | | |
| SN54LS367AJ | L LS 3-STATE HEX BUFFERS | 3 | 25 | 2.48 | | |
| SN54LS368AJ | L LS 3-STATE HEX BUFFERS | 3 | 25 | 2.48 | | |
| SN54LS373J | L **LS OCTAL TRANSPARNT LATCH** | **2** | **18** | **1.89** | **360** | **1.52** |
| SN54LS374J | L **LS OCTAL D FF 3-STATE** | **2** | **18** | **1.89** | **360** | **1.52** |
| SN54LS375J | L LS 4-BIT D LATCH | 3 | 25 | 2.48 | | |
| SN54LS377J | L LS OCTAL D FF W/ENABLE | 3 | 18 | 4.15 | | |
| SN54LS378J | L LS HEX D FF W/ENABLE | 3 | 25 | 3.21 | | |
| SN54LS379J | L LS 4-BIT D FF W/ENABLE | 3 | 25 | 3.21 | | |
| SN54LS38J | L LS QD 2I/P NAND BUFFER | 3 | 25 | 1.73 | | |
| SN54LS390J | L LS DL DECADE COUNTER | 3 | 25 | 3.21 | | |
| SN54LS393J | L **LS DL 4-STAGE BIN CNTR** | **2** | **25** | **1.91** | **500** | **1.54** |
| SN54LS398J | L LS QD 2-PORT REG | 3 | 18 | 5.73 | | |
| SN54LS399J | L LS QD 2-PORT REG | 3 | 25 | 3.45 | | |
| SN54LS40J | L LS DL 4I/P NAND BUFFER | 3 | 25 | 1.73 | | |
| SN54LS42J | L LS 1-OF-10 DECODER | 3 | 25 | 2.59 | | |
| SN54LS490J | L LS DL DECADE COUNTER | 3 | 25 | 5.76 | | |
| SN54LS51J | L LS DL 2WD 2I/P/3I/P AOI | 3 | 25 | 1.68 | | |
| SN54LS54J | L LS 2-3-3-2 A/O/I GATE | 3 | 25 | 1.68 | | |
| SN54LS640J | L LS OCTAL BUS TRANSCEIVERS | 3 | 18 | 5.73 | | |
| SN54LS641J | L LS OCTAL BUS TRANSCEIVERS | 3 | 18 | 5.88 | | |
| SN54LS670J | L LS 4X4 REG FILE W/3ST O/P | 3 | 25 | 3.91 | | |
| SN54LS73AJ | L LS DL JK NEG EDG-TRIG FF | 3 | 25 | 2.28 | | |
| SN54LS74AJ | L **LS DL D TYPE POS EDGE FF** | **2** | **25** | **.95** | **500** | **.77** |
| SN54LS75J | L LS 4-BIT D LATCH | 3 | 25 | 2.28 | | |
| SN54LS76AJ | L LS DL JK FF W/SET & CLEAR | 3 | 25 | 2.17 | | |
| SN54LS77J | L LS 4-BIT D LATCH | 3 | 25 | 3.24 | | |
| SN54LS83AJ | L LS 4-BIT BIN FULL ADDER | 3 | 25 | 2.59 | | |
| SN54LS85J | L LS 4-BIT MAG COMPARATOR | 3 | 25 | 2.48 | | |
| SN54LS86J | L LS QD 2I/P EXC OR | 3 | 25 | 2.17 | | |
| SN54LS90J | L LS DECADE COUNTER | 3 | 25 | 2.69 | | |
| SN54LS92J | L LS DIVIDE BY 12 COUNTER | 3 | 25 | 2.69 | | |
| SN54LS93J | L LS 4-BIT BIN COUNTER | 3 | 25 | 2.48 | | |
| SN54LS95BJ | L LS 4-BIT SHFT REG | 3 | 25 | 3.04 | | |
| SN74LS00D | L **LS QD 2I/P NAND GATE** | **2** | **55** | **.31** | **110** | **.25** |
| SN74LS00J | L LS QD 2I/P NAND GATE | 3 | 25 | 1.60 | | |
| SN74LS00N | L **LS QD 2I/P NAND GATE** | **1** | **25** | **.27** | **500** | **.22** |
| SN74LS00ND | L LS QD 2I/P NAND GATE | 3 | 25 | 1.00 | | |
| SN74LS01D | L LS QD 2I/P NAND GATE O/C | U | 55 | .31 | | |
| SN74LS01N | L **LS QD 2I/P NAND GATE O/C** | **2** | **25** | **.27** | **500** | **.22** |
| SN74LS02D | L **LS QD 2I/P NOR GATE** | **2** | **55** | **.31** | **110** | **.25** |
| SN74LS02DR2 | L LSQD 2I/P NOR GATE | U | 2500 | .32 | | |
| SN74LS02J | L LS QD 2I/P NOR GATE | 3 | 25 | 1.60 | | |
| SN74LS02N | L **LS QD 2I/P NOR GATE** | **1** | **25** | **.27** | **500** | **.22** |
| SN74LS02ND | L LS QD 2I/P NOR GATE | 3 | 25 | 1.00 | | |

# TTL

| | | | | Per Unit | Sugg. | Resale | Price |
|---|---|---|---|---|---|---|---|
| Type No. | Grp/Description | | PC | Qty | Price | Qty | Price |
| **SN74LS03D** | L | LS QD 2I/P NAND GATE O/C | U | 55 | .31 | | |
| **SN74LS03N** | L | **LS QD 2I/P NAND GATE O/C** | 1 | 25 | .27 | 500 | .22 |
| **SN74LS04D** | L | **LS HEX INVERTER** | 2 | 55 | .31 | 110 | .25 |
| **SN74LS04DR2** | L | **LS HEX INVERTER** | N | 2500 | .32 | 5000 | .26 |
| **SN74LS04J** | L | LS HEX INVERTER | 3 | 25 | 1.60 | | |
| **SN74LS04N** | L | **LS HEX INVERTER** | 1 | 25 | .27 | 500 | .22 |
| **SN74LS04ND** | L | LS HEX INVERTER | 3 | 25 | 1.00 | | |
| **SN74LS05D** | L | **LS HEX INVERTER O/C** | 2 | 55 | .31 | 110 | .25 |
| **SN74LS05DR2** | L | LS HEX INVERTER O/C | U | 2500 | .32 | | |
| **SN74LS05N** | L | **LS HEX INVERTER O/C** | 1 | 25 | .27 | 500 | .22 |
| **SN74LS05ND** | L | LS HEX INVERTER O/C | 3 | 25 | 1.00 | | |
| **SN74LS08D** | L | **LS QD 2I/P AND GATE** | 2 | 55 | .31 | 110 | .25 |
| **SN74LS08DR2** | L | **LS QD 2I/P AND GATE** | 2 | 2500 | .32 | 5000 | .26 |
| **SN74LS08J** | L | LS QD 2I/P AND GATE | 3 | 25 | 1.60 | | |
| **SN74LS08N** | L | **LS QD 2I/P AND GATE** | 1 | 25 | .27 | 500 | .22 |
| **SN74LS08ND** | L | LS QD 2I/P AND GATE | U | 500 | .45 | | |
| **SN74LS09D** | L | **LS QD 2I/P AND GATE O/C** | 2 | 55 | .31 | 110 | .25 |
| **SN74LS09N** | L | **LS QD 2I/P AND GATE O/C** | 2 | 25 | .27 | 500 | .22 |
| **SN74LS09ND** | L | LS QD 2I/P AND GATE O/C | 3 | 25 | 1.00 | | |
| **SN74LS10D** | L | **LS TRPL 3I/P NAND GATE** | 2 | 55 | .31 | 110 | .25 |
| **SN74LS10DR2** | L | LS TRPL 3I/P NAND GATE | U | 2500 | .32 | | |
| **SN74LS10N** | L | **LS TRPL 3I/P NAND GATE** | 1 | 25 | .27 | 500 | .22 |
| **SN74LS107AD** | L | LS DL JK FLIP FLOP | 3 | 55 | .91 | | |
| **SN74LS107AJ** | L | LS DL JK FLIP FLOP | 3 | 25 | 1.84 | | |
| **SN74LS107AN** | L | **LS DL JK FLIP FLOP** | 2 | 25 | .32 | 500 | .26 |
| **SN74LS107AND** | L | LS DL JK FLIP FLOP | 3 | 25 | 1.12 | | |
| **SN74LS109AD** | L | LS DL JK POS EDG-TRIG FF | U | 48 | .36 | | |
| **SN74LS109AJ** | L | LS DL JK POS EDG-TRIG FF | 3 | 25 | 1.84 | | |
| **SN74LS109AN** | L | **LS DL JK POS EDG-TRIG FF** | 2 | 25 | .32 | 500 | .26 |
| **SN74LS109AND** | L | LS DL JK POS EDG-TRIG FF | 3 | 25 | 1.12 | | |
| **SN74LS11D** | L | LS TRIPLE 3 I/P AND GATE | U | 55 | .31 | | |
| **SN74LS11N** | L | **LS TRIPLE 3 I/P AND GATE** | 2 | 25 | .27 | 500 | .22 |
| **SN74LS11ND** | L | LS TRIPLE 3 I/P AND GATE | 3 | 25 | 1.09 | | |
| **SN74LS112AD** | L | LS TRPL 3I/P NAND GATEO/C | U | 48 | .36 | | |
| **SN74LS112ADR2** | L | LS TRPL 3I/P NAND GATEO/C | U | 2500 | .38 | | |

Ⓜ = Motorola Blue Chip Program Device
N = Key New Motorola Device
R = Key "Focus" Motorola Device
U = Active/Non-Preferred Device

1 = Mature, Stable, High-Volume Device
2 = Moderate-Volume Device
3 = Low-Volume Device

# XC - MICRO's

|  |  |  | Per Unit Sugg. Resale Price |  |  |  |
|---|---|---|---|---|---|---|
| Type No. | Grp/Description | PC | Qty | Price | Qty | Price |
| XC56002RC40 | A CAUTION - SEE PAGE 9-2 | Ⓜ | 14 | 91.03 |  |  |
| XC56004FJ40 | A CAUTION - SEE PAGE 9-2 | 2 | 84 | 38.20 |  |  |
| XC56156FE40 | A CAUTION - SEE PAGE 9-2 | Ⓜ | 36 | 64.80 |  |  |
| XC56156FE60 | A CAUTION - SEE PAGE 9-2 | Ⓜ | 36 | 67.50 |  |  |
| XC56166FE60 | A CAUTION - SEE PAGE 9-2 | Ⓜ | 36 | 75.01 |  |  |
| XC56200LC10 | A CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 11.00 |  |  |
| XC68HC05E0FN | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 5.95 |  |  |
| XC68HC11C0CFU2 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 500 | 9.37 |  |  |
| XC68HC11G5FN1 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 16 | 14.77 |  |  |
| XC68HC11KA0CFN4 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 19 | 14.85 |  |  |
| XC68HC11KA1CFN4 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 19 | 15.52 |  |  |
| XC68HC11K0CFN3 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 16 | 12.21 |  |  |
| XC68HC11K0CFN4 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 16 | 13.68 |  |  |
| XC68HC11K1CFN3 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 16 | 12.76 |  |  |
| XC68HC11K1CFN4 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 16 | 14.29 |  |  |
| XC68HC705B16CFN | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 19.50 |  |  |
| XC68HC705B16FN | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 16.95 |  |  |
| XC68HC705C9CFN | F CAUTION - SEE PAGE 9-2 | Ⓜ | 27 | 17.20 |  |  |
| XC68HC705C9CP | F CAUTION - SEE PAGE 9-2 | Ⓜ | 9 | 17.20 |  |  |
| XC68HC705C9FN | F CAUTION - SEE PAGE 9-2 | Ⓜ | 27 | 14.95 |  |  |
| XC68HC705C9P | F CAUTION - SEE PAGE 9-2 | Ⓜ | 9 | 14.95 |  |  |
| XC68HC705D9CFN | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 17.20 |  |  |
| XC68HC705D9CP | F CAUTION - SEE PAGE 9-2 | Ⓜ | 9 | 17.20 |  |  |
| XC68HC705D9FN | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 14.95 |  |  |
| XC68HC705D9P | F CAUTION - SEE PAGE 9-2 | Ⓜ | 9 | 14.95 |  |  |
| XC68HC705F6K | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 17.95 |  |  |
| XC68HC705G1FU | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 15.46 |  |  |
| XC68HC705G10FU | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 19.95 |  |  |
| XC68HC705K1CDW | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 4.20 |  |  |
| XC68HC705K1CP | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 3.85 |  |  |
| XC68HC705K1CS | F CAUTION - SEE PAGE 9-2 | 2 | 1 | 22.94 |  |  |
| XC68HC705K1DW | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 3.65 |  |  |
| XC68HC705K1P | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 3.35 |  |  |
| XC68HC705K1S | F CAUTION - SEE PAGE 9-2 | 1 | 1 | 19.95 |  |  |
| XC68HC705L1B | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 8.95 |  |  |
| XC68HC705L5FU | F CAUTION - SEE PAGE 9-2 | Ⓜ | 50 | 12.95 |  |  |
| XC68HC705P6CDW | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 12.60 |  |  |
| XC68HC705P6CP | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 12.60 |  |  |
| XC68HC705P6DW | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 10.95 |  |  |
| XC68HC705P6P | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 10.95 |  |  |
| XC68HC705P9CDW | F CAUTION - SEE PAGE 9-2 | Ⓜ | 27 | 7.95 |  |  |
| XC68HC705P9CP | F CAUTION - SEE PAGE 9-2 | Ⓜ | 13 | 7.95 |  |  |
| XC68HC705P9CS | F CAUTION - SEE PAGE 9-2 | 2 | 13 | 38.24 |  |  |
| XC68HC705P9DW | F CAUTION - SEE PAGE 9-2 | Ⓜ | 27 | 6.95 |  |  |
| XC68HC705P9P | F CAUTION - SEE PAGE 9-2 | Ⓜ | 13 | 6.95 |  |  |

# XC - MICRO's

| Type No. | Grp/Description | PC | Per Unit Sugg. Resale Price Qty | Price | Qty | Price |
|---|---|---|---|---|---|---|
| XC68HC705P9S | F CAUTION - SEE PAGE 9-2 | 2 | 13 | 33.25 | | |
| XC68HC705T10B | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 17.95 | | |
| XC68HC705T3P | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 21.96 | | |
| XC68HC705T4B | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 15.95 | | |
| XC68HC711E9CFS2 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 24 | 24.48 | | |
| XC68HC711E9CFS3 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 24 | 27.42 | | |
| XC68HC711G5FS | F CAUTION - SEE PAGE 9-2 | Ⓜ | 16 | 61.57 | | |
| XC68HC711KA4CFN3 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 19 | 28.87 | | |
| XC68HC711KA4CFN4 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 19 | 32.33 | | |
| XC68HC711KA4CFS4 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 19 | 53.89 | | |
| XC68HC711K4CFN3 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 16 | 37.95 | | |
| XC68HC711K4CFN4 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 16 | 42.52 | | |
| XC68HC711K4CFS3 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 16 | 63.26 | | |
| XC68HC711K4CFS4 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 16 | 70.86 | | |
| XC68HC711L6CFN2 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 19 | 21.14 | | |
| XC68HC711L6CFS3 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 40.16 | | |
| XC68HC711P2CFN4 | F CAUTION - SEE PAGE 9-2 | Ⓜ | 16 | 47.92 | | |
| XC96002RC33 | A CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 193.10 | | |
| XC96002RC40 | A CAUTION - SEE PAGE 9-2 | Ⓜ | 1 | 231.70 | | |

Ⓜ = Motorola Blue Chip Program Device
N = Key New Motorola Device
R = Key "Focus" Motorola Device
U = Active/Non-Preferred Device

1 = Mature, Stable, High-Volume Device
2 = Moderate-Volume Device
3 = Low-Volume Device

# DEVELOPMENT TOOLS

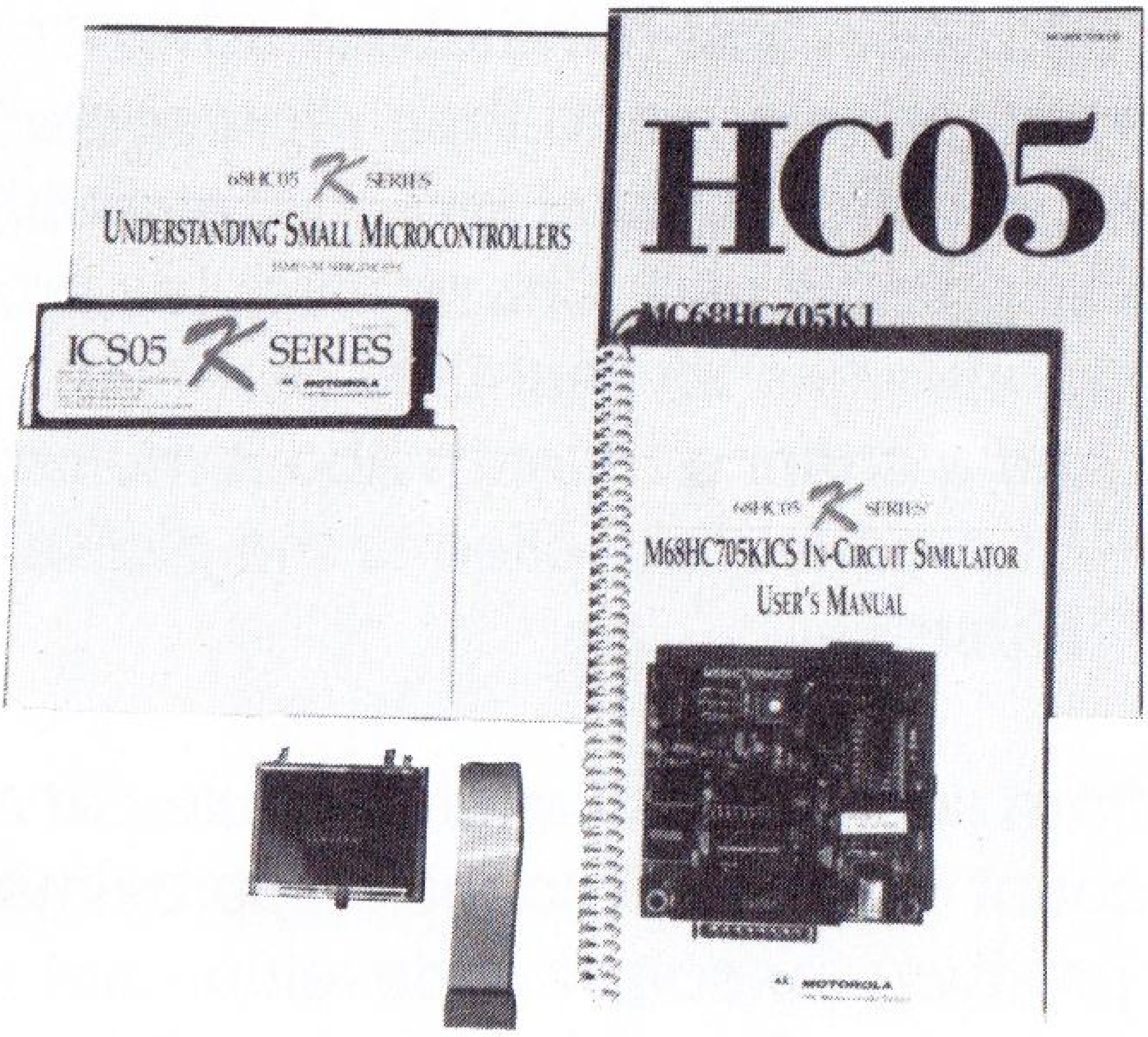
To help instructors and students supplement textbook study and learn first-hand about advanced Motorola semiconductors and their representative technologies, we offer several low-cost evaluation modules for academic use. These modules provide hands-on opportunities for real-time research experience and a chance to learn about motorola state-of-the-art products supplied to the global electronics industry.

Motorola offers special evaluation modules at a significant discount (normal discount is approximately 40% on all product) for software development and hardware evaluation. These low-cost modules "provide an economical means for designing, debugging, and evaluating" microcontroller, microprocessor and telecom device families.

For more information on Motorola's evaluation module product or development systems, review the following pages and request the related BR's for those of interest.

Send us a letter on your institutional letter head to request any additional information needed. Allow 8-10 working days for shipment on most product or information requests.

# MC68HC705KICS


68HC05 K SERIES
UNDERSTANDING SMALL MICROCONTROLLERS
ICS05 K SERIES
MOTOROLA
HC05
MC68HC705K1
68HC05 K SERIES
M68HC705KICS IN-CIRCUIT SIMULATOR
USER'S MANUAL
MOTOROLA

DEVICE EVALUATION:
MC68HC705K1

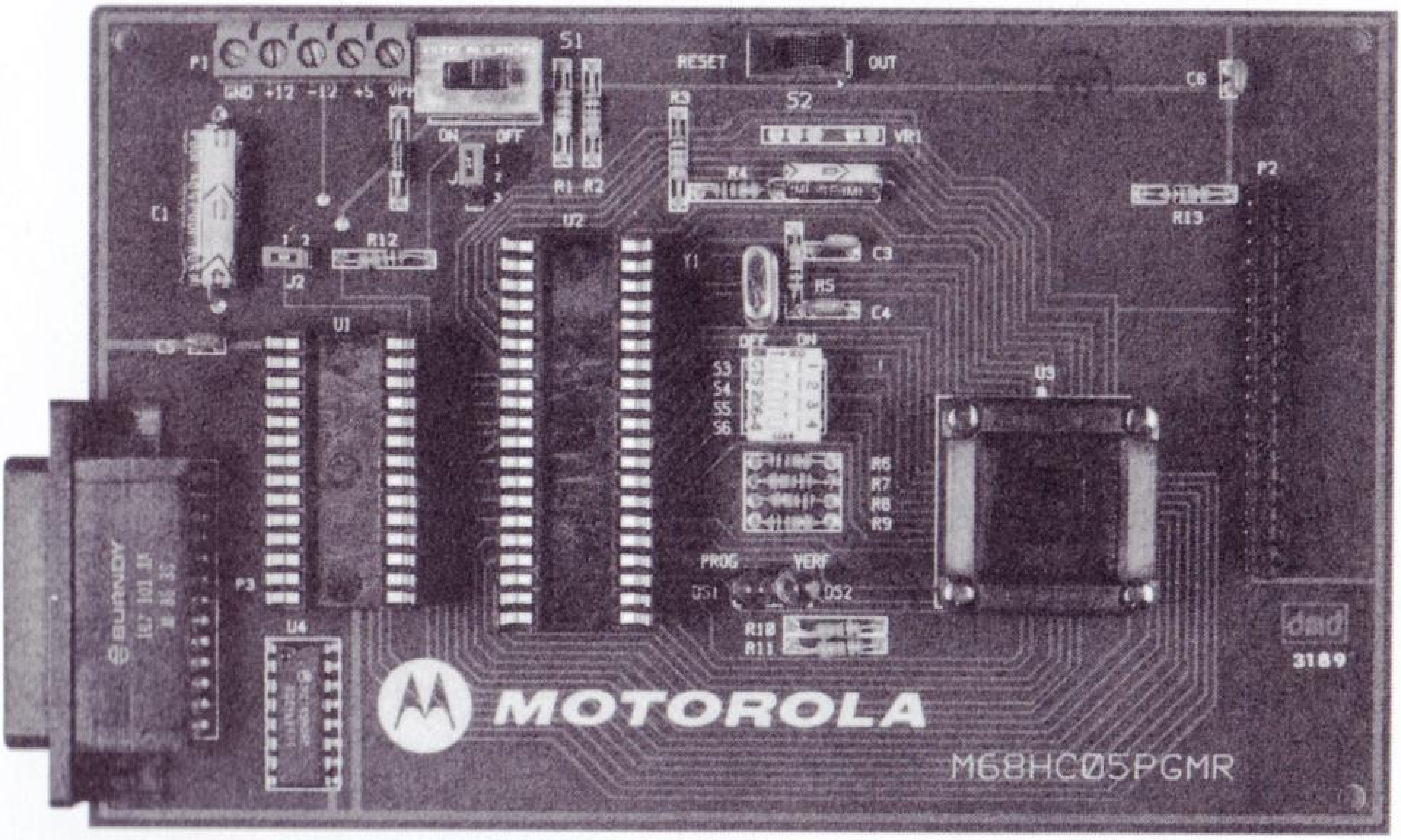
OPERATING REQUIREMENTS:
Power Supply: +5Vdc at 0.1 A ( max. )
PC or compatible with 64 Kbyte memory and DOS compatible parallel port.

FEATURES:
* Economically develop and debug target systems using MC68HC705K1 MCUs.
* Debugging of code in an easy-to-use software based environment.
* Integrated development environment for assembly, editing, and in-circuit simluation.
* Four types of software breakpoints.
* Communication via PC parallel port.
* Offers programming of MC68HC705K1 EPROM MCUs.
* Connectible, during code simulation, to target hardware for use of actual target I/Os.
* ICS05K in-circuit simulator stand-alone simulator software.
* IASM05K assembler.

DIMENSIONS; Width: 3.2" Length: 3.5"

( More Details: Order KICS User's Manual )

# MC68HC05PGMR


MOTOROLA
M68HC05PGMR
RESET
OUT
S1
S2
P1
GND +12 -12 +5 VPP
ON OFF
R1 R2
R3
R4
VR1
C1
C3
C4
C5
C6
R5
R12
R13
J1
J2
U1
U2
U3
U4
Y1
P2
P3
S3
S4
S5
S6
R6
R7
R8
R9
PROG
VERF
DS1
DS2
R10
R11
3189

FEATURES:

- Economical Means of Programming; MC68HC705C8, MC68HC805C4, and XC68HC05A6P1
- 40-Pin DIP MCU Socket
- 44-Lead PLCC MCU Socket Circuitry
- 8K X 8 EPROM Socket
- RS-232C Terminal I/O Port
- HCMOS Compatible 40-Pin MCU I/O Port

POWER REQUIREMENTS:

PGMR .requires user supplied +5 Vdc, +12Vdc, -12 Vdc, and Vpp power

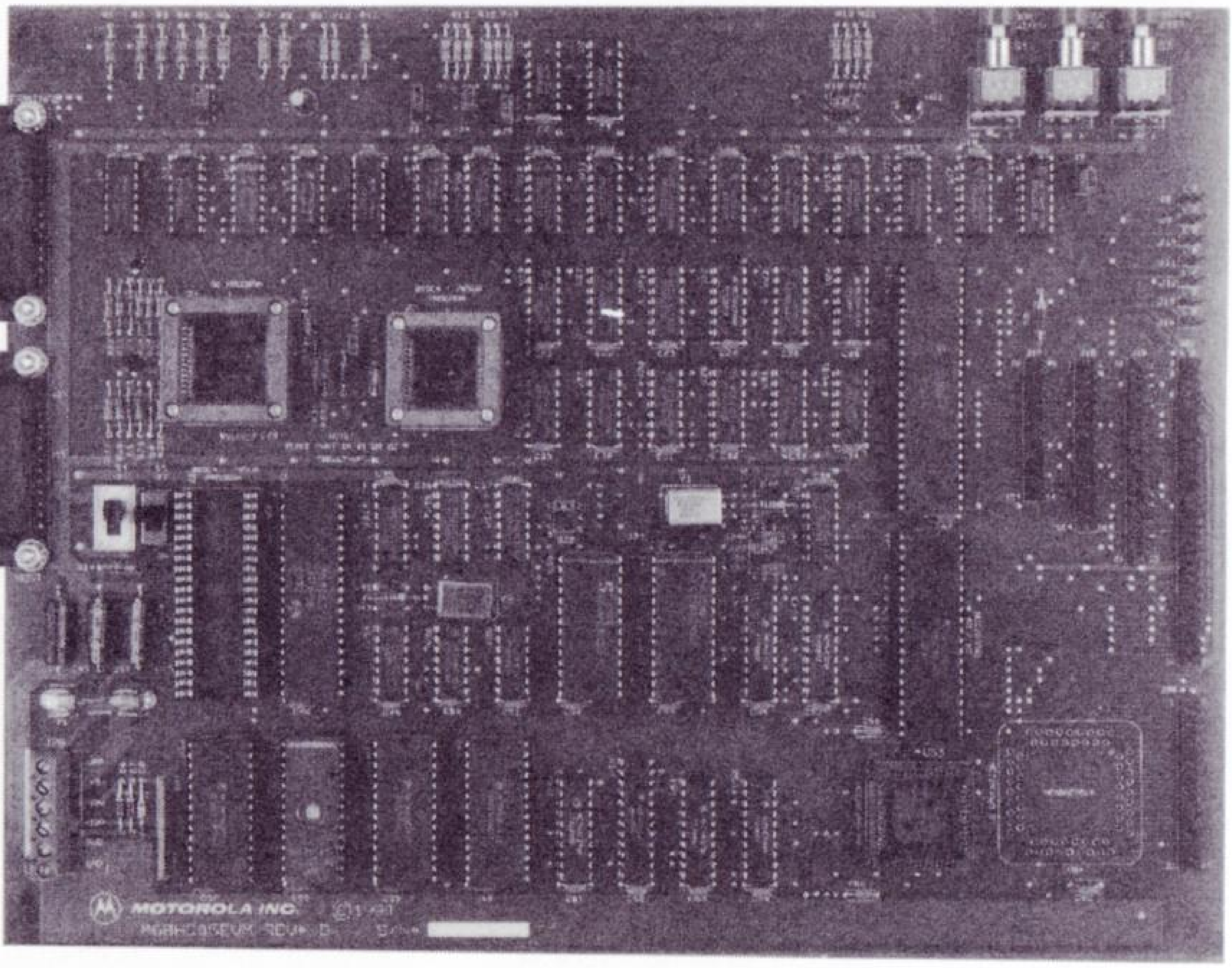
Plus a RS-232C compatible Terminal

(More Detail: Order BR730/D)

OTHER PGMRs AVAILABLE:

M68HC705B5PGMR M68HC705J2PGMR M68HC705P9PGMR

# MC68HC05EVM



DEVICE EVALUATION:
MC68HC05A6/B4/B6/C2-C4/C8/C9 MC68HC805B6/C4
MC68HCL05C4/C8 * MC68HC705C8 MC68HSC05C4/C8 *
( * = with restrictions )

OPERATING REQUIREMENTS:

Power Supply
+ 5 Vdc @ 1.0 A
+12 Vdc @ 0.1 A
-12 Vdc @ 0.1 A

Programmer
( Refer to device data sheet for specific Vpp information )

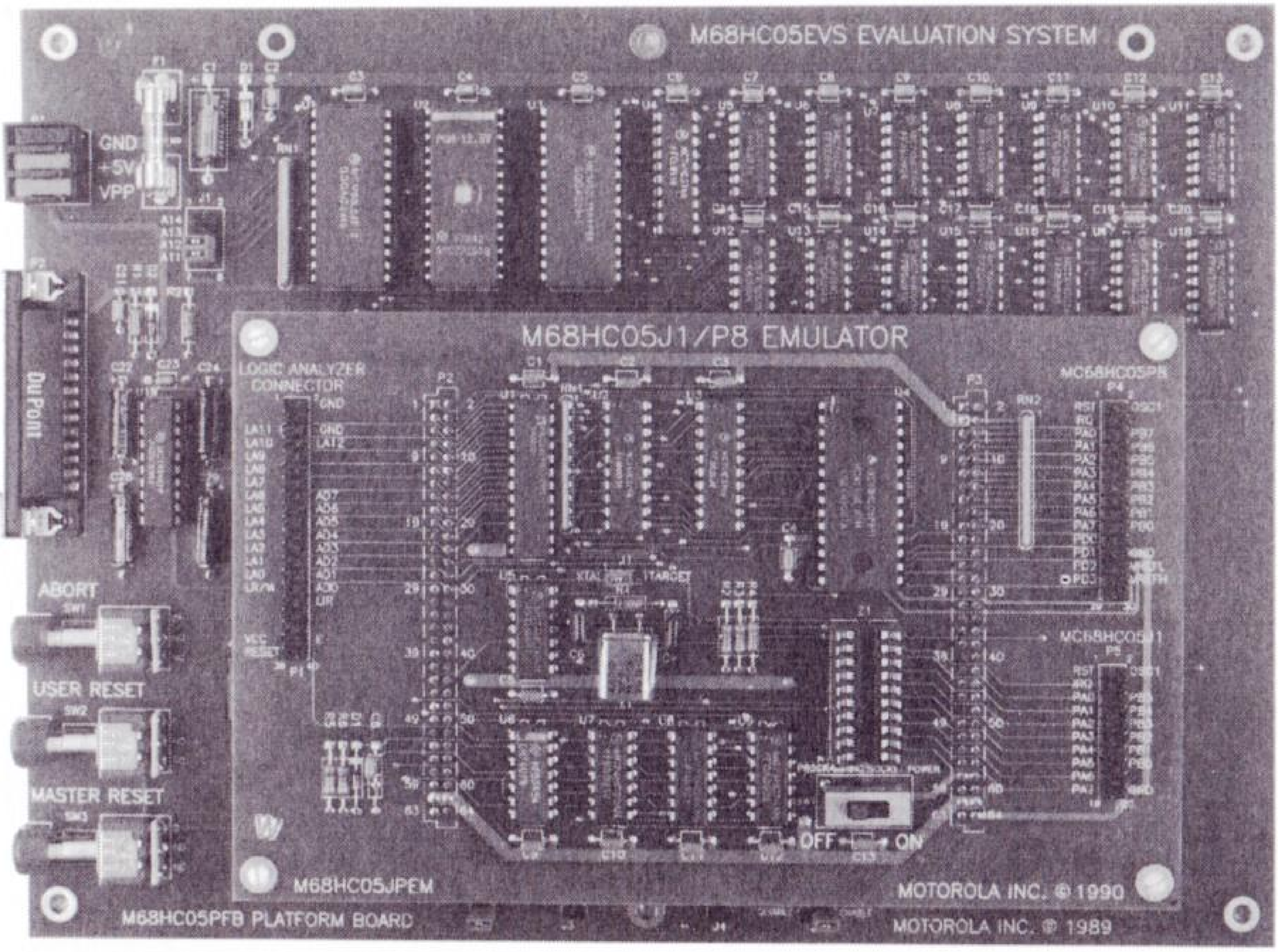
FEATURES:

- * Dual 8K-Byte Memory Map; 8K/16K User Pseudo ROM.
- * Resident MC68HC05 MCU; 28,40,52, & 68-Pin MCU; Extension I/O Ports.
- * Resident R65C52 DACIA; Terminal I/O RS-232 Fixed 9600 Baud
- * Host RS-232 I/O Port Selectable
- * OTPROM/EPROM/EEPROM Programmer: 40-Pin DIP, 44 & 52 Lead PLCC

DIMENSIONS: Width: 12.0 in. Length: 9.5 in.

( More Details: Order BR295/D )

# MC68HC05xxEVS


M68HC05EVS EVALUATION SYSTEM
GND
+5V
VPP
DuPont
M68HC05J1/P8 EMULATOR
LOGIC ANALYZER CONNECTOR
MC68HC05P8
MC68HC05J1
ABORT
USER RESET
MASTER RESET
OFF
ON
M68HC05JPEM
M68HC05PFB PLATFORM BOARD
MOTOROLA INC. © 1990
MOTOROLA INC. © 1989

DEVICE EVALUATION:
All MC68HC05 series devices when ordered with a device specific Emulation Module

OPERATING REQUIREMENTS:
Power supply: + 5Vdc and an RS-232C compatible terminal

FEATURES:

- Resident MCU dependent on EVS ordered
- EVSbug Monitor Debugging Firmware
- Host computer downloading capability
- Dual 8K Monitor and 8K User Pseudo ROM
- OTPROM/EPROM MCU Programmer
- Logic Analyzer connector
- RS-232C terminal/host computer I/O port

( More Details: Order BR735/D )

# MMDS05

MOTOROLA
MMDS05
Modular Development System

The MMDS11 is an emulator, bus state analyzer, and control station for debugging hardware and software. It includes a control station, a passive probe, a self-test card, a programming card, and a logic clip cable that provides connection to a clock signal, or as many as 16 logic signals on the target system. Ball clips are provided for use with cable leads. The MMDS05 is shipped with the M68HC05P9EM, however, other EMs are available separately.

DEVICES EVALUATED:

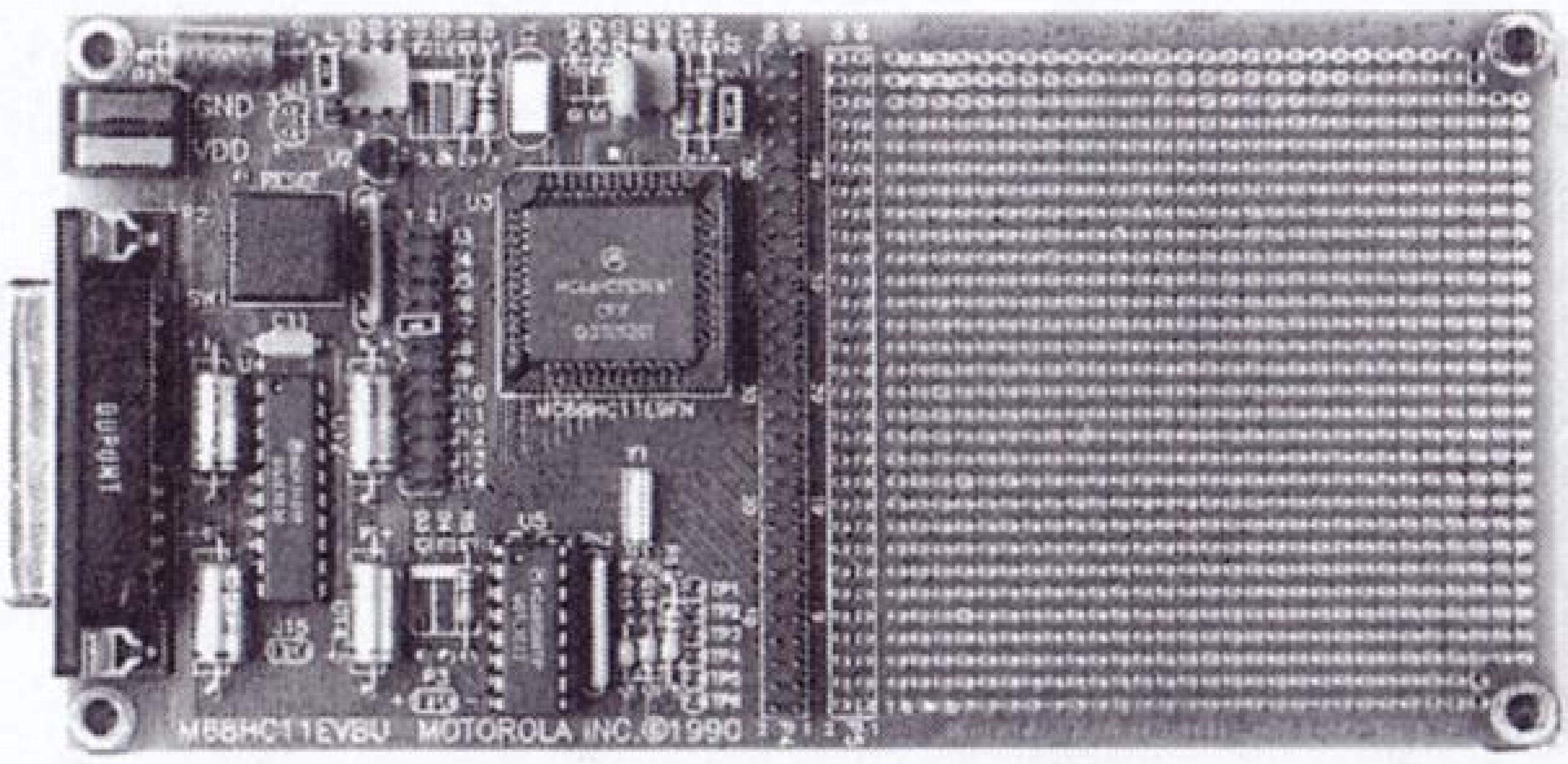
The M68HC05P9EM shipped with the MMDS05 will evaluate the MC68HC05P1, P4-P7, P9, or 705P9 MCU. Other separately purchased emulator modules (EM) and cables complete the MMDS functionality with regards to a particular MCU or MCU family.

FEATURES:

* Real-time, transparant in-circuit emulation
* Built in emulation memory. Main: 64kilobytes, Dual port: 1kilobyte
* Real-time bus analysis at MCU speed; instruction disassembly; state-machine controlled triggering; real-time tracing
* As many as 64 hardware breakpoints
* Serial RS-232C interface to host computer, communicating at 2400, 4800, 9600, 19200 38400, or 57600 baud
* Development software
* Serial and logic cables

( More Details: Order MMDS05/D)

# S68HC11EVBU


GND
VDD
RESET
SW1
U3
U4
U5
P1
MC68HC11E9FN
M68HC11EVBU MOTOROLA INC.©1990

DEVICE EVALUATION:
MC68HC11A8, E9, 711E9, 811E2

OPERATING REQUIREMENTS:
Power Supply: Single +5 Vdc

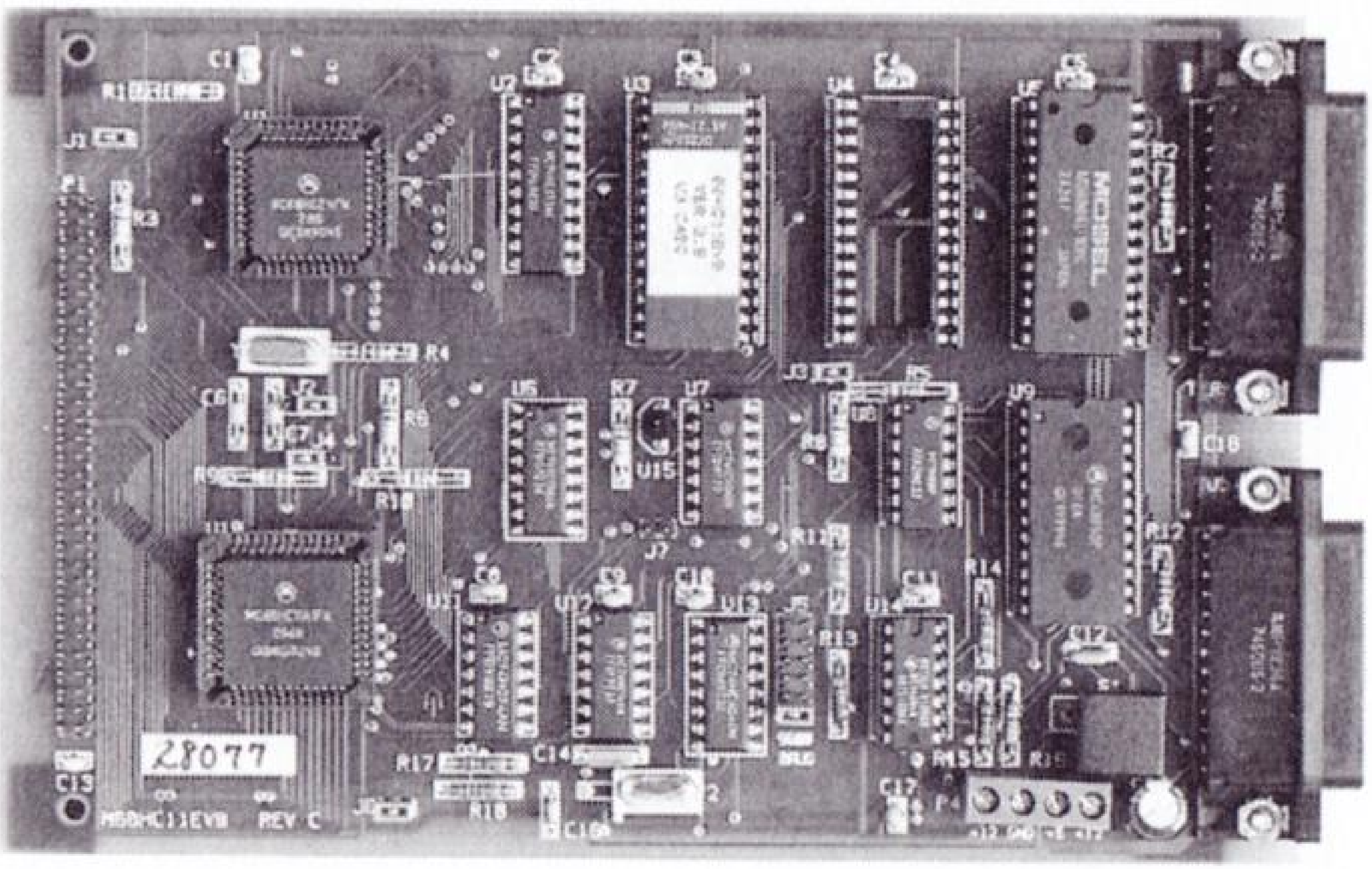
FEATURES:

- * Overall debugging/evaluation control of the EVBU is provided by the monitor program via terminal interaction.
- * Resident MC68HC11E9FN1 MCU and MC68HC68T1P real-time clock with serial interface.
- * Peripheral circuitry RS232 terminal I/O port.
- * Wire-wrap area for custom interfacing PCBug11 monitor program on disk.
- * Auxillary MC68HC711E9FS windowed EPROM included

DIMENSIONS: Width: 3.25" Length: 6.75"

( More Details: Order BR736/D )

# S68HC11EVB



DEVICE EVALUATION:
MC68HC11A0/A1/A8 MC68HC11E0/E1/E9
MC68HC811E2*
( * = with restrictions )

OPERATING REQUIREMENTS:
Power Supply
+5 Vdc @ 0.5 A
+12 Vdc @ 0.1 A
-12 Vdc @ 0.1 A

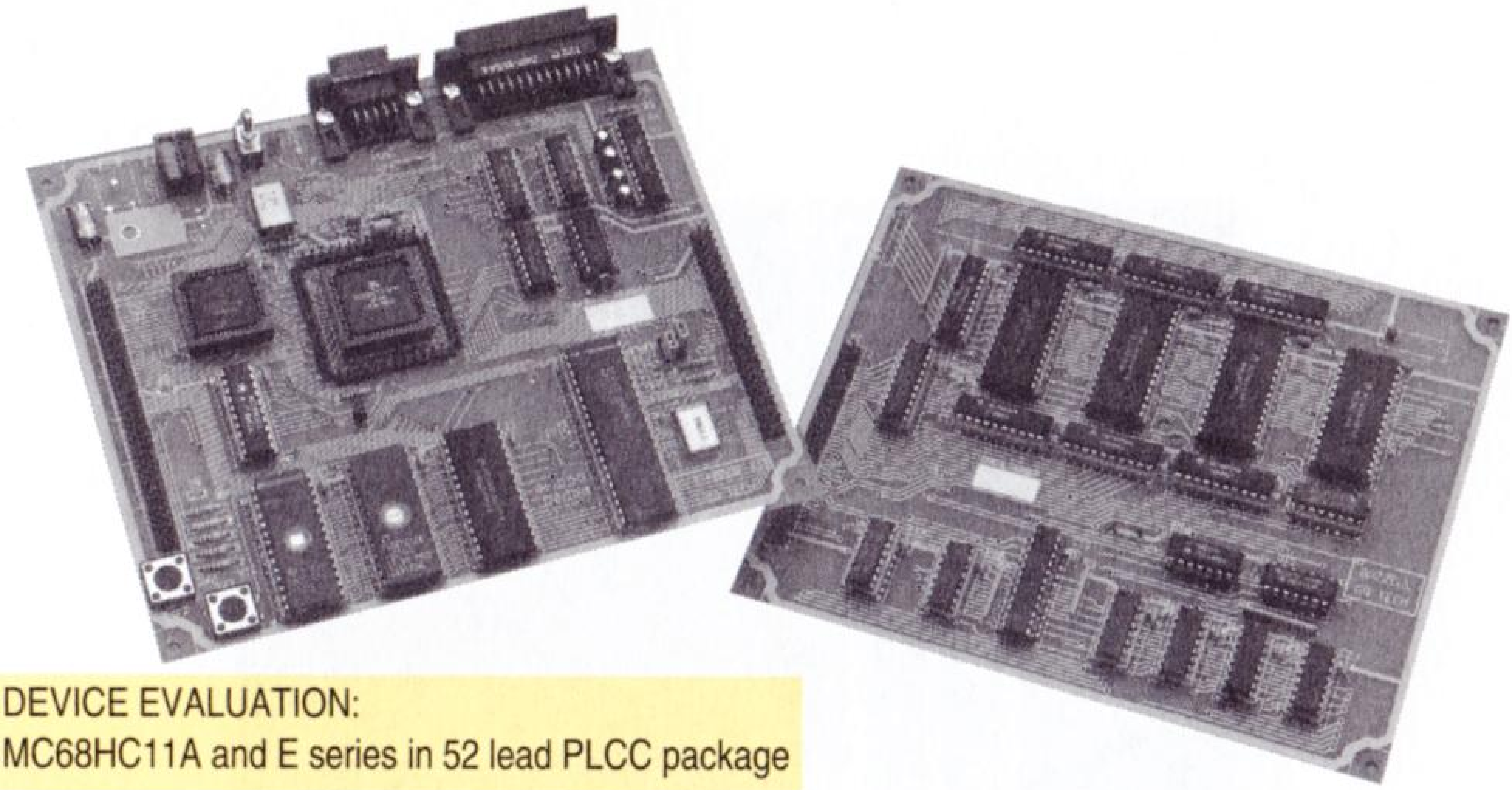
FEATURES:

- 64K-Byte Memory Map; 8K Monitor EPROM, 8K/16K User RAM
- Resident MC68HC11A1 MCU; Emulates Single Chip Mode Only
- Resident MC68HC24 PRU; Replaces MCU I/O Ports B & C for EVB Single Chip Mode Evaluation
- Resident MC68B50 ACIA; Terminal I/O Port, RS-232, hardware selectable Host Computer I/O Port, Fixed MCU SCI 9600 Baud rate (non-selectable)

DIMENSIONS: Width: 7.062" Length: 4.625"

( More Details: Order BR278/D )

# S68HC11EVB2



DEVICE EVALUATION:
MC68HC11A and E series in 52 lead PLCC package

OPERATING REQUIREMENTS:
Power Supply +5Vdc. RS-232c compatible or PC is required.

FEATURES:
EVALUATION BOARD

- * MCU registers and memory, including on-chip EEPROM, can be viewed or modified
- * Single chip memory map emulated exactly
- * Real time debugging with interrupts
- * Trace instruction execution mode
- * Trace only mode
- * Permits master reset into monitor program, or reset into user program
- * Can download computer code from a PC or host computer
- * Single line assembler/disassebler resident in monitor program
- * DUART for internal and host ports
- * Real time debugging with interrupts
- * Can program CONFIG control register and internal EEPROM

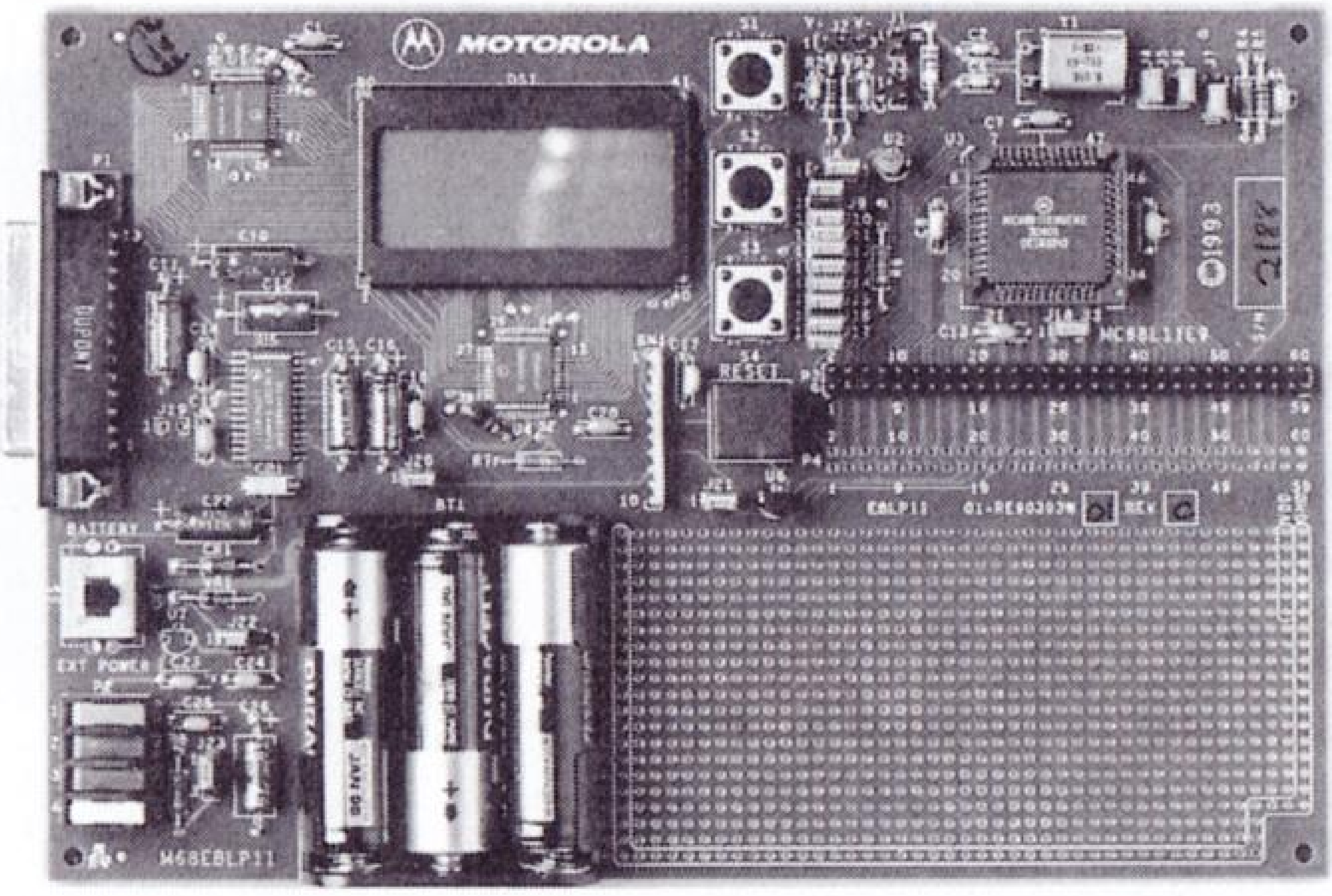
LOGIC ANALYZER BOARD

- * Sophisticated bus state logic analysis features
- * An 8K by 32 bit buffer to capture the state of address, data, LIR, and six user test points for 8192 bus cycles
- * Capture Buffer Search Command for finding the presence of any condition
- * Uses the Internal Read Visibilty (IRV) capability of the MC68HC11E0, E1, E2, or E9 to capture reads of internal addresses.
- * Extensive automatic power-on self test

DIMENSIONS: Width: 7.062" Length: 4.625"

( More Details: Order EVB2 Preview )

# M68EBLP11



DEVICE EVALUATION:
Extended voltage 52 lead PLCC:
MC68L11A0/A1/A8; MC68L11E0,E1,E9; MC68711E9

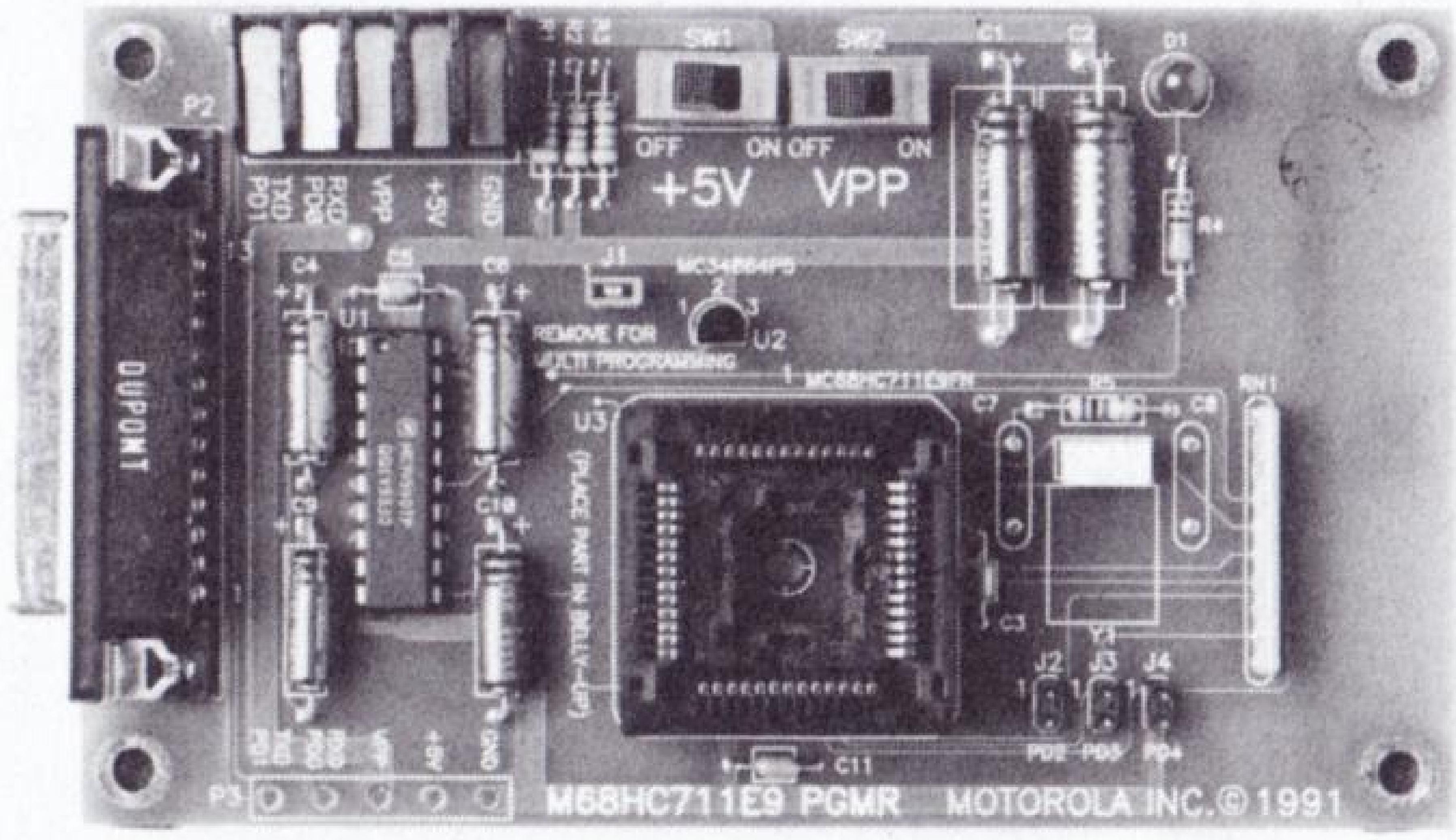
OPERATING REQUIREMENTS:
Three "AA" batteries, regulated external power (+2.7-5.5 Vdc), or unregulated external power (+7.5-14.0 Vdc)

FEATURES:

- * Resident MC68B11E9 extended voltage device
- * BUFFALO Monitor/Debugger firmware with one-line assembler/disassembler
- * Single chip, expanded-multiplexed, special test, and special bootstrap operation modes
- * 14 position two line LCD display
- * Wire-wrap area for custom interfacing
- * Micropowered low voltage inhibit (LVI) circuit inhibits EBLP if power drops below 2.7 V
- * Project manual and Low Power Applications Examples (IBM and MAC compatible)
- * Low Power Design Guidebook
- * Motorola 68HC11 Assembler (AS11)
- * Four pack of "AA" batteries and three extra crystals ( 2,4, and 8 MhzM)

( More Details order: M68EBLP11 Preview )

# M68HC711E9PGMR



DEVICES PROGRAMMED:
MC68HC711E9 OTPROM/EPROM

OPERATING REQUIREMENTS:
Power Supply: +5 Vdc and Vpp. RS-232C compatible terminal or PC

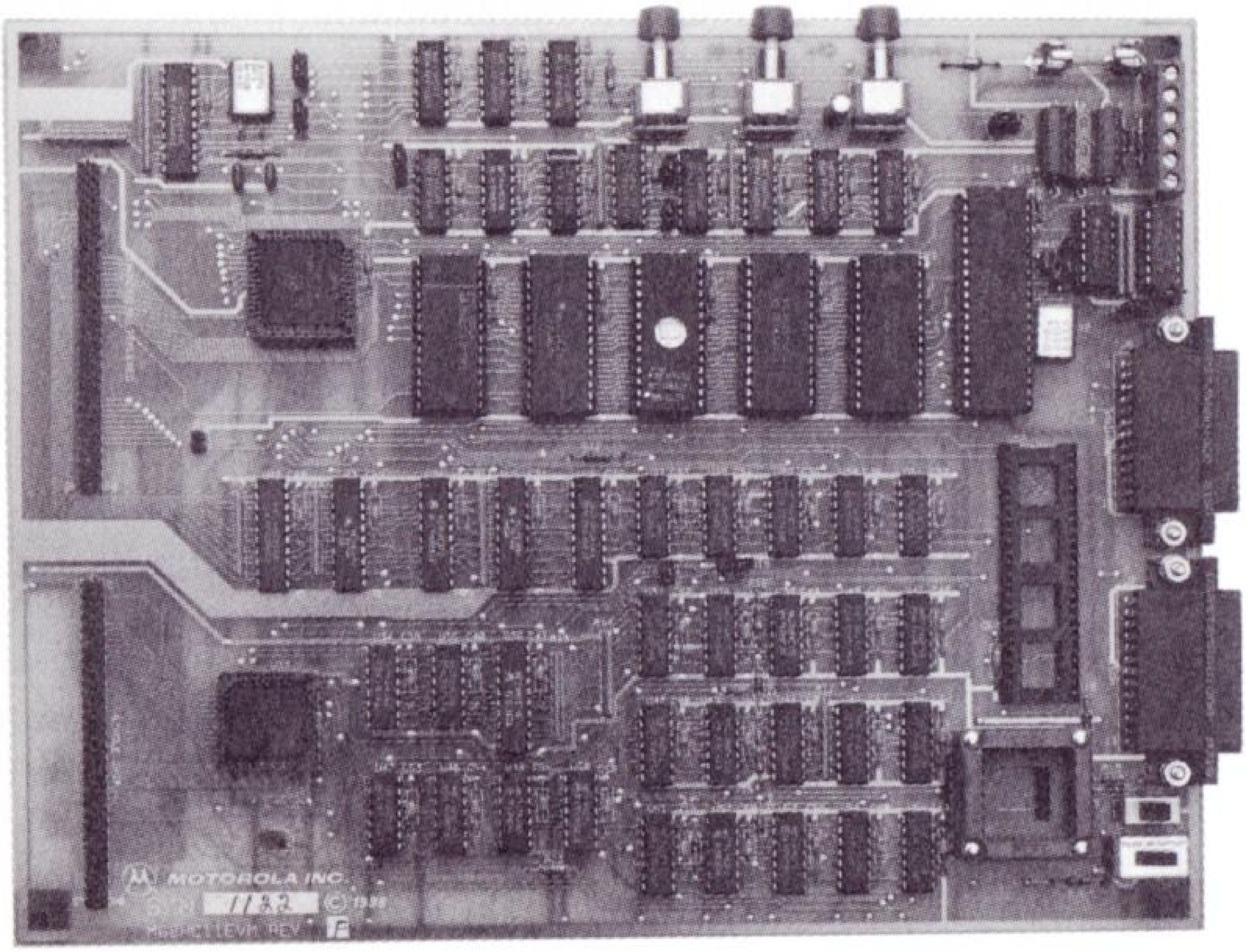
FEATURES:

- * 52-Lead PLCC MCU socket circuitry
- * RS-232C compatible PC I/O port
- * Multi-PGMR programming interconnection circuitry

( More Details: Order BR775/D )

OTHER PGMRs AVAILABLE:
M68HC711D3PGMR

# M68HC11EVM



DEVICE EVALUATION:
MC68HC11A0/A1/A8
MC68HC11E0/E1/E9
MC68HC811E2 *
( * = with restrictions )

OPERATING REQUIREMENTS:

Power Supply
+ 5 Vdc @ 1.0 A
+ 12 Vdc @ 0.1 A
- 12 Vdc @ 0.1 A

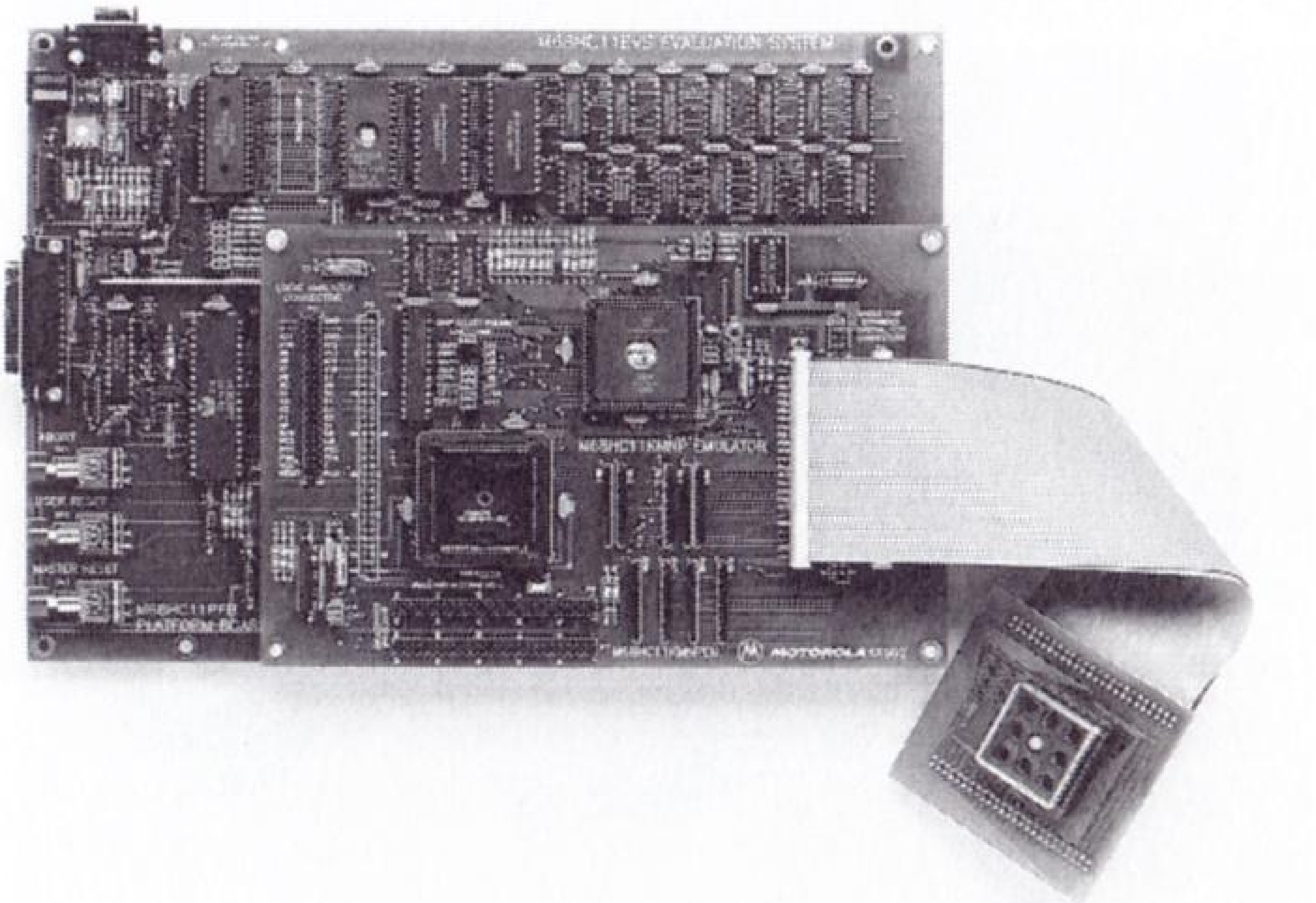
Programmer
(Refer to device data sheet for specific Vpp information)

FEATURES:
- Dual 64K Byte Memory Map; 8K/16K Byte User Pseudo ROM.
- Resident MC68HC11 MCU; Expanded Multiplexed Mode; Single Chip Mode.
- Resident MC2681 DUART; Terminal I/O RS-232 Port;
- Host Computer I/O Port, RS-232 Compatible.
- EEPROM MCU Programmer; 48-Pin DIP & 52-lead PLCC Packages.

DIMENSIONS: Width 11.0 in, Length 8.5 in.

(More Details; Order BR266/D)

# M68HC11xxEVS



DEVICE EVALUATION:
All MC68HC11 series devices when ordered with a device specific Emulation Module.

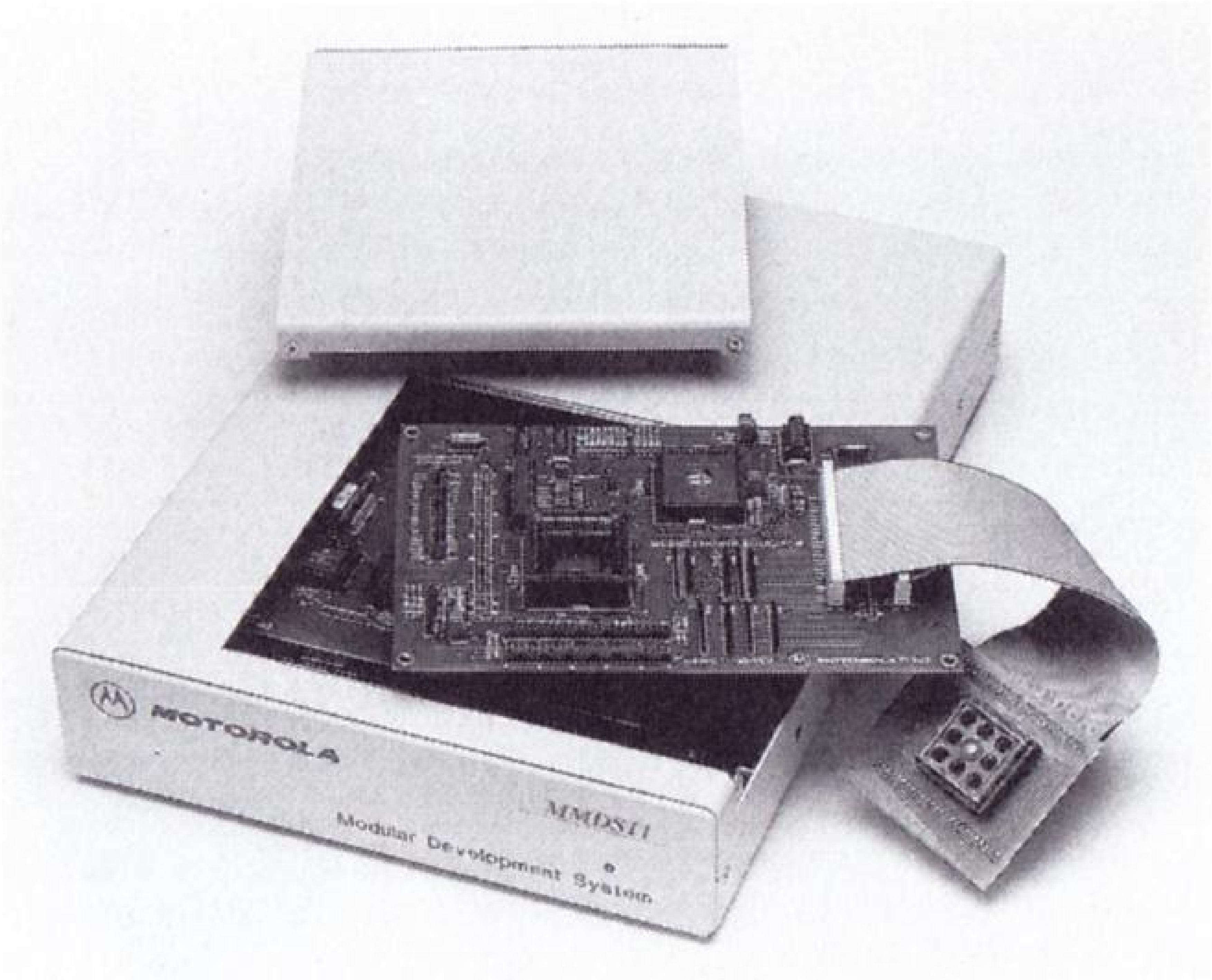
OPERATING REQUIREMENTS:
Power Supply: +5 Vdc
IBM PC/AT or PS/2 Terminal or Host Computer Required.

FEATURES:

- System includes an Emulator Module ( EM ), Platform Board ( PFB ), and Resident Firmware.
- PFB includes Power and RS-232 Connectors, and a Reset Switch.
- Emulator Module contains Resident MCU and Target System and Logic Analyzer Connectors.
- Resident MCU dependent on EVS ordered
- Self-Contained Programming/Operating Environment through Resident EVSbug Firmware.
- Command Set to display and modify Memory and Internal Registers, Execute Programs, Control Peripheral I/O Access, and program OTPROM, EPROM, and EEPROM.
- One Line Assembler/Disassembler.
- Host computer download capability.
- 64Kbyte Monitor Map with 16Kbytes Monitor EPROM.
- Resident Unit User Map with 64 KBytes of Emulation RAM.
- OTPROM, EPROM, EEPROM MCU Programmer.
- Single Chip, Expanded, and Special-test Operation modes.

( More Details: Order EVS User's Manual )

# M68MMDS11



The MMDS11 is an emulator, bus state analyzer, and control station for debugging hardware and software. It includes a control station, a passive probe, a self-test card, a programming card, and a logic clip cable that provides connection to a clock signal, or as many as 16 logic signals on the target system. Ball clips are provided for use with cable leads. Separately purchased Emulator Modules ( EM ) let your development system emulate a variety ofother microcontrollers.

DEVICES EVALUATED:
A separately purchased emulator module ( EM ) and cable completes the MMDS functionality with regards to a particular MCU or MCU series. This includes the MC68HC11A,C, D, E, F, G, K, KA, L, M, N, and P families.

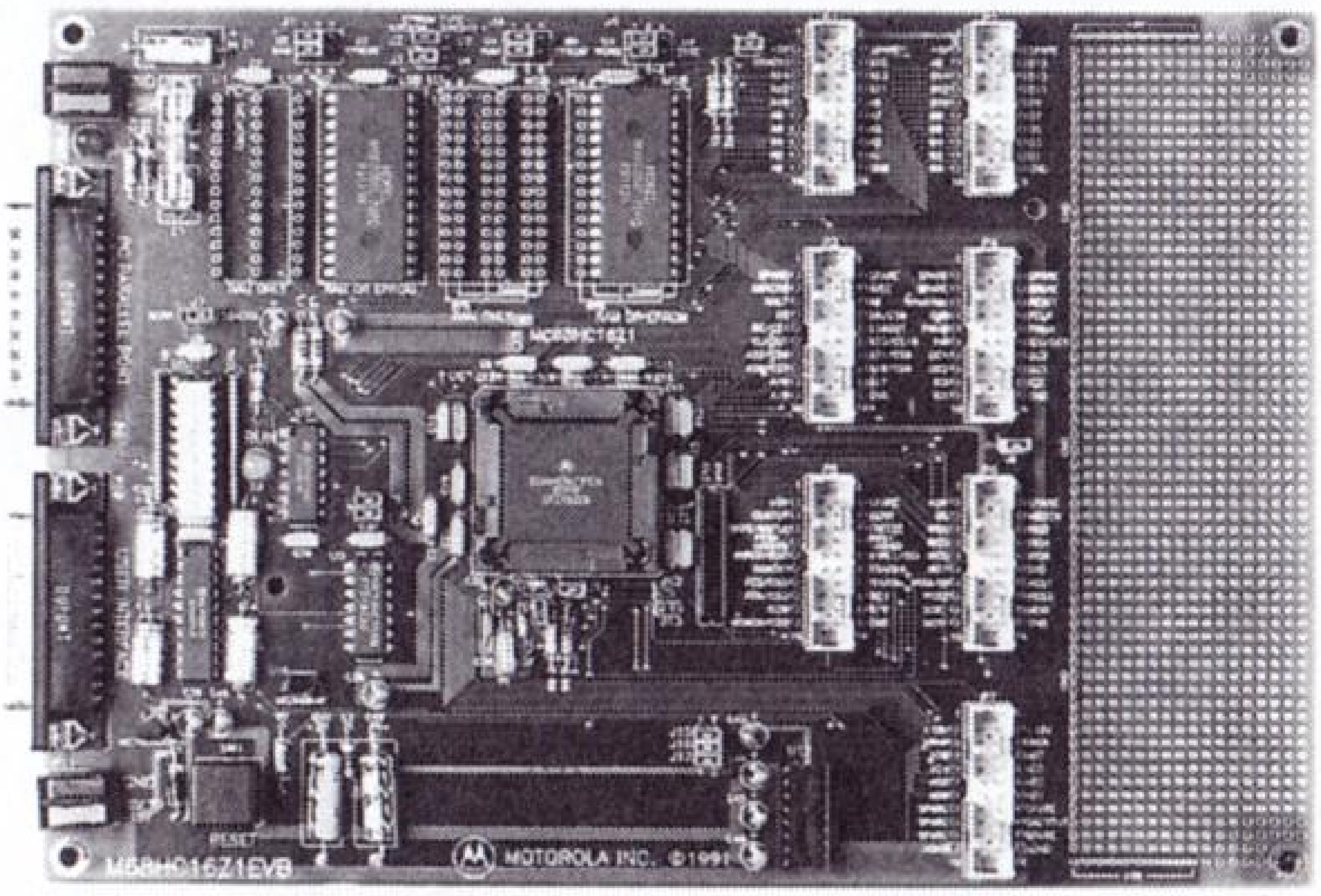
OPERATING REQUIREMENTS:
Host PC or compatible PC/AT, or PS/2, running MS-DOS 3.3 or above with 640 kilobytes of RAM, and at least one MB of free memory on hard disk.

FEATURES:

* Real time transparent in-circuit emulation ( as fast as 6 MHz )
* Built-in emulation memory/main memory, 64 kilobytes dual port emulation memory and vari able display and memory modify
* Real time bus analysis at MCU speed; instruction disassembly; state-machine controller; trig gering and real-time trace
* As many as 128 hardware breakpoints
* Built in AC power supply
* Serial RS-232C connection to host

(More Details: Order MMDS11/D )

# M68HC16Z1EVB



The M68HC16Z1 incorporates a true 16 bit CPU, a system integration module (SIM), an 8/10 bit A/D converter (ADC), a queued serial module (QSM), a general purpose timer (GPT), and a1024-byte RAM (SRAM).

DEVICES EVALUATED:
MC68HC16Z1

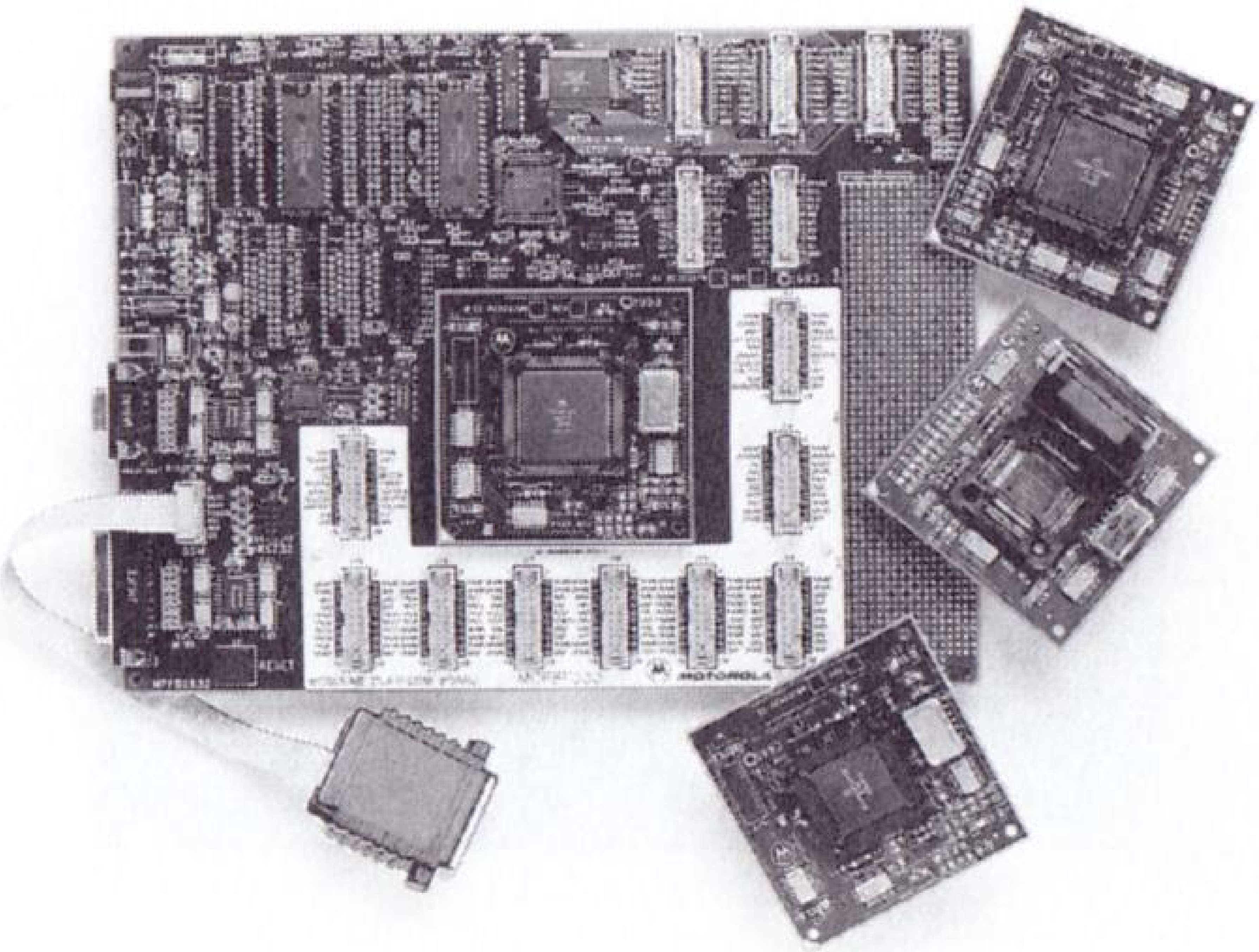
OPERATING REQUIREMENTS:
Power Supply: +5 Vdc. PC running MS-DOS , PC-DOS, or Dr-DOS. Centronics compatible interface port and cable assembly. Optional D/A conversion require a user supplied Burr-Brown PCM56P device and -8 to -15 Vdc power

FEATURES:

- * Background mode operation for detailed operation from PC platform without an on-board monitor
- * Integrated assembly/editing/emulation environment for easy development
- * As many as seven software breakpoints
- * Memory map of target system
- * RS-232C terminal I/O port
- * Logic analyzer pod connectors

( More Details: Order M68HC16Z1EVB/D )

# M68MEVB16Z1B



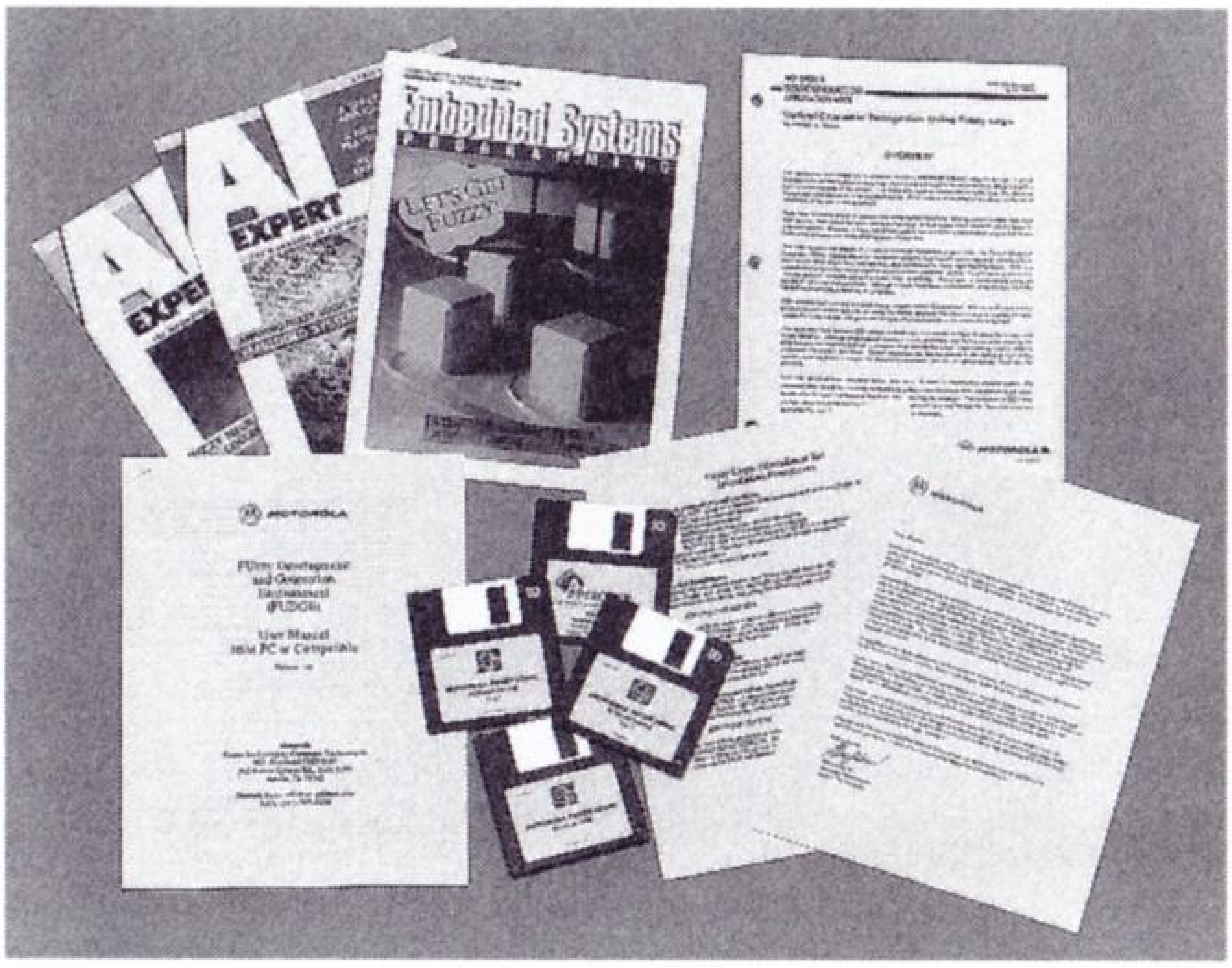
The M68MEVB16Z1B is one configuration of the MEVB1632 development series. This system consists of a Modular Platform Board ( MPFB ) and a Modular Personality Board ( MPB ) and may be ordered in several configurations depending on your development needs. The MC68HC16Y1 MPB is also currently available, with MPBs for the MC68HC16916Y1 and MC68HC916Z1 due in 1995.

FEATURES:

- An economical means of evaluating target systems incorporating the MC68HC16 family of MCUs
- On board support for multiple memory device types ( RAM, EPROM, and flash EEPROM ), and sizes ( 32KBytes to 512KBytes )
- Modular to support future MC68HC16 family members
- Background mode operation
- Integrated assembly/editing/evaluation/programming envrionment
- Seven software breakpoints
- Two RS-232C communication links
- Logic analyzer pod connectors for all MCU pins
- On-board MCU and flash EEPROM programming
- On-board wire wrap area
- Includes M68ICD16 In-Circuit Debugger

( More Details: Order MEVB1632 Preview )

# FLEDKT01



OPERATING REQUIREMENTS:
Minimum PC/AT class or compatible computer with a floppy, 40 MB hard-drive and VGA monitor. DOS™ 3.3 with MicroSoft Windows™ 3.0 or higher ( DOS™ 5.0 recommnded).

FEATURES:

- A low-cost, easy-to-use medium for learning and applying Fuzzy Logic principles.
- A computer based tutorial which takes the user from basic concepts and terminology to a five step methodology sequence which demonstrates principles and procedures. An advanced topic section covers stability, adaptability, ambiguity, noise, alpha cuts, and contribution weights. An introduction to neural nets and developing them in a fuzzy environment is included. Finally, an overview is given on the development tools, FUDGE and kernels.
- The Knowledge Base Generator (KBG), using graphical and natural language, combines with the 68HC11/68HC05 inference engines enabling fuzzy logic implementation with MCU applications.
- The KGB allows generation of downloadable real-time code.
- Fuzzy Interface Development Environment-FIDE ( pronounced Fee-day) demo version features time saving debug functions.
- A special project included for a hands-on learning experience with FIDE.

OTHER FUZZY PRODUCTS

- FUZBASIC tutorial featuring KBG, inference engines and technical documentation, demonstrates the potential of fuzzy logic.

Note: Inference engines for 68HC16 and 683XX pending release.

# S68FUZBASIC01

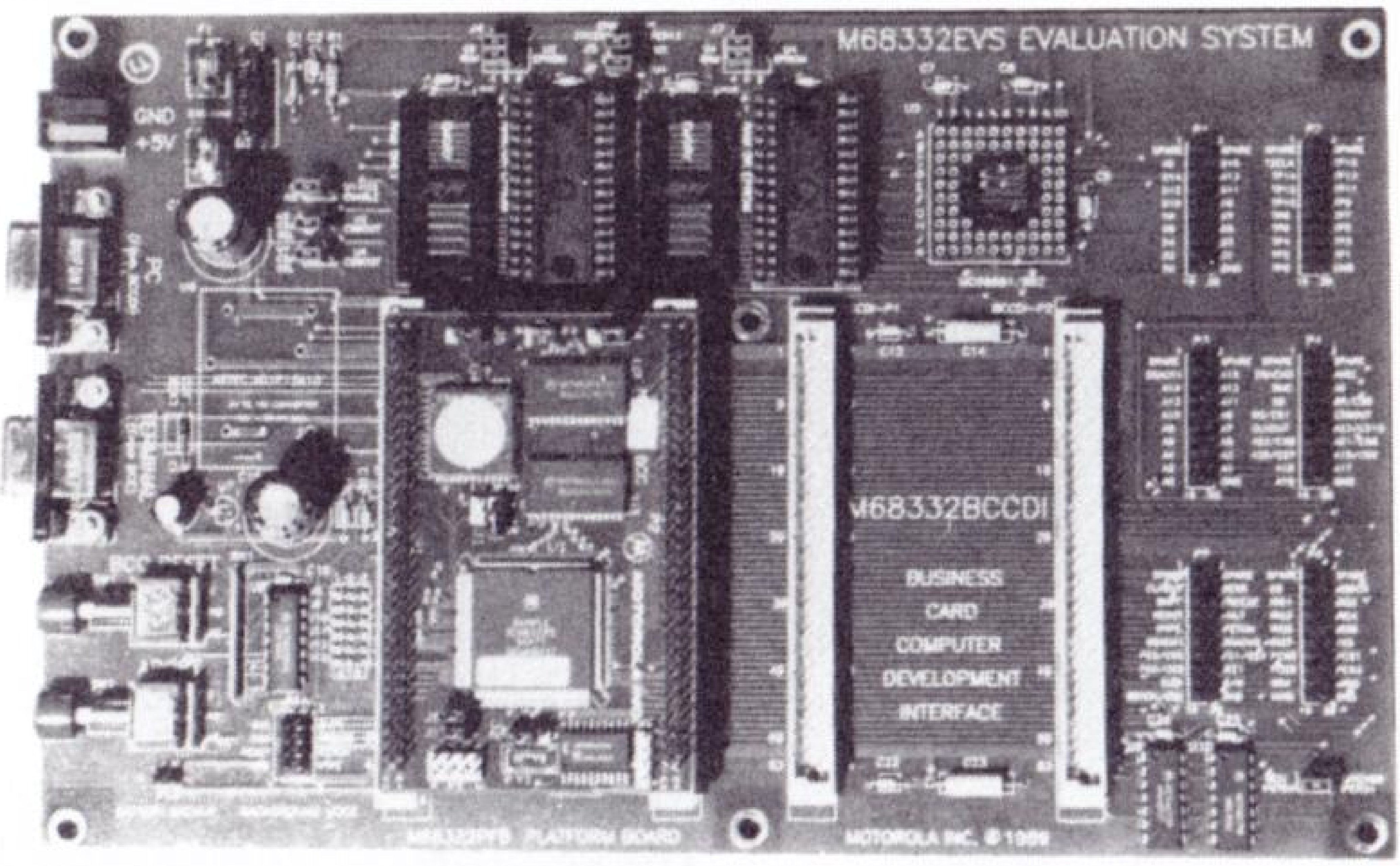
No
Photo
Available

A students introduction to Fuzzy Logic.

FEATURES:

- * Education Program v2.0
- * FUZZY05/11/16/68300 inference engines
- * FUzzy Development and Generation Environment ( FUDGE )
- * HC11K4/HC6Z1 Fuzzy PD version of PID
- * Hands-on and homework examples
- * Textbook, Fuzzy Logic and Control; Jamshidi, Vadiee, and Ross ( Prentice-Hall/1993 )

# M68332EVK


M68332EVS EVALUATION SYSTEM
GND
+5V
M68332BCCDI
BUSINESS
CARD
COMPUTER
DEVELOPMENT
INTERFACE
M68332EVS PLATFORM BOARD
MOTOROLA INC. © 1989

The M68332EVK evaluation kit consists of the M68332 Business Card Computer ( BCC ) and the M68332 Platform Board ( PFB )

DEVICE EVALUATION:
MC68332

OPERATING REQUIREMENTS:
Power Supply: +5 Vdc and RS-232C compatible terminal

M68332 BUSINESS CARD COMPUTER

- The BCC is a 2.25" by 3.5" PCB using surface mount technology
- Resident M68332 MCU
- 64K by 16 bit EPROM 332bug
- 32K by 16 bit RAM
- RS-232C Terminal/Host I/O port
- Background Mode Interface Port
- Interface connectors

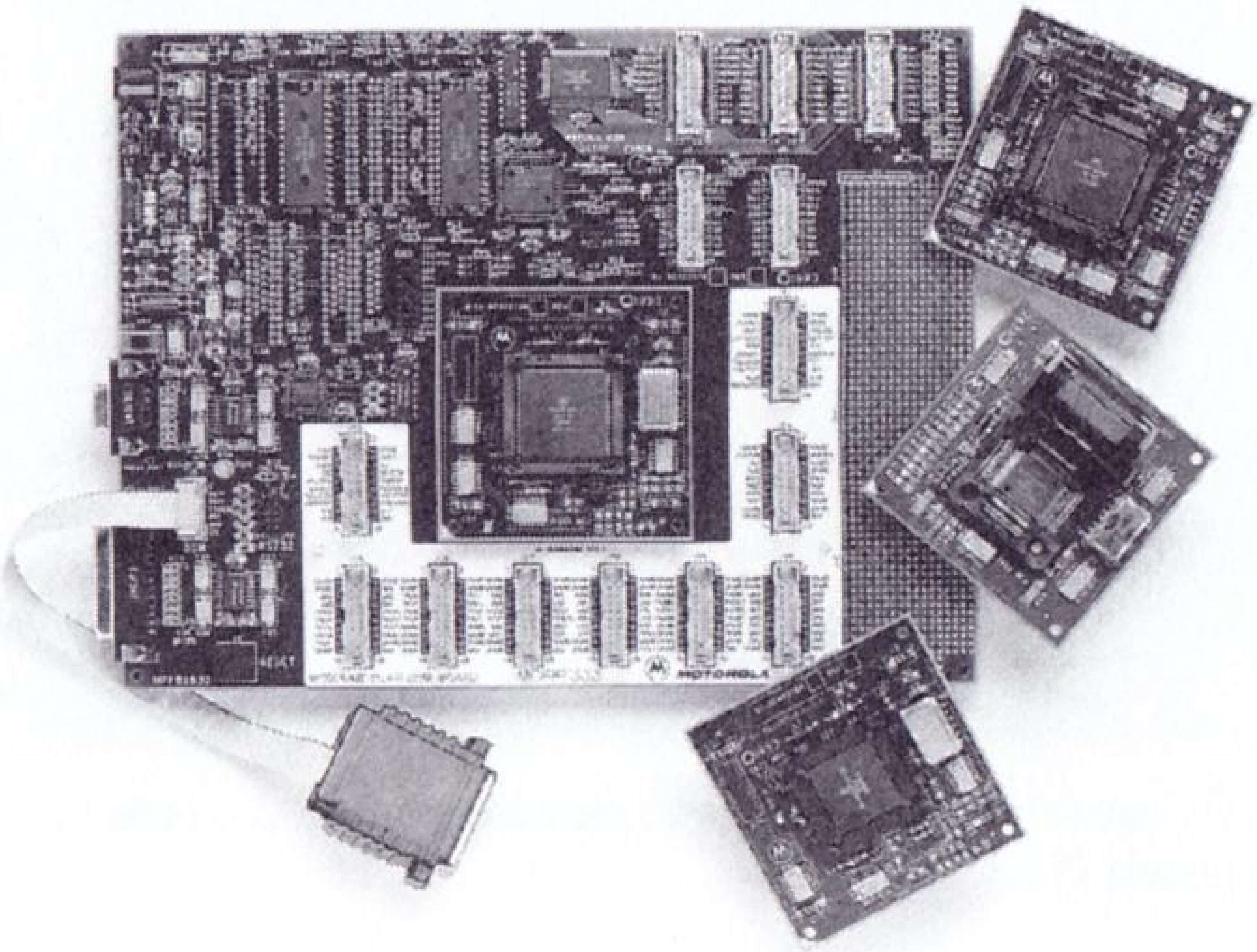
M68332 PLATFORM BOARD FEATURES

- The PFB is a 6" by 10" PCB which provides a base for the BCC
- Four 32K by 8 RAM/EPROM sockets ( unpopulated )
- MC68881/MC68882 Floating Point Coprocessor socket ( unpopulated )
- External power supply connector ( +5 Vdc and ground )
- Two RS-232C terminal/host I/O ports
- Logic Analyzer Interface ports
- Background Mode Interface port
- Interface connectors

OTHER EVKs AVAILABLE:
M68331EVK

( More Details: Order BR734/D )

# M68MEVB332B



DEVICE EVALUATION:

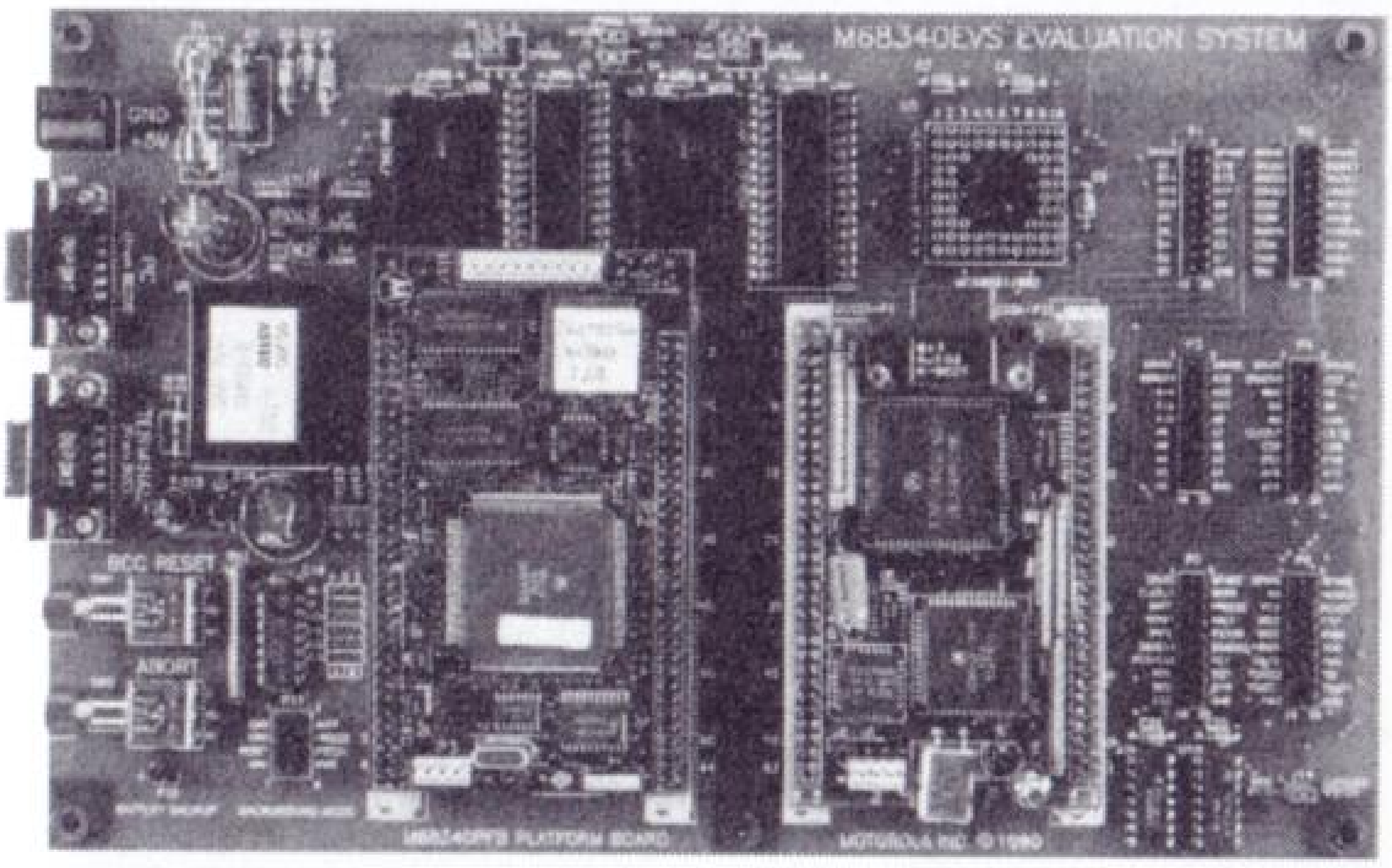
The M68MEVB332B is one configuration of the MEVB1632 development series. This system consists of a Modular Platform Board ( MPFB ) and a Modular Personality Board, and may be ordered in several configurations depending on your development needs. The MC68HC331 MPB is also currently available, with MPBs for the MC68HCF333 and MC68HC334 due in 1995.

FEATURES:

- * An economical means of evaluating target systems incorporating the MC68300 family of MCUs
- * On board support for multiple memory device types ( RAM, EPROM, and flash EEPROM ), and sizes ( 32KBytes to 512KBytes )
- * Modular to support future MC68300 family members
- * Background mode operation
- * Integrated assembly/editing/evaluation/programming environment
- * Seven software breakpoints
- * Two RS-232C communication links
- * Logic analyzer pod connectors for all MCU pins
- * On-board MCU and flash EEPROM programming
- * On-board wire wrap area
- * Includes M68ICD32 In-Circuit Debugger

( More Details: Order MEVB1632 Preview )

# M68340EVS



The M6834EVS evaluation system (EVS) is a board set designed to provide a low cost method of evaluating the MC68340 integrated processor. The EVS consists of the M68340 business card computer ( BCC ), M68340 business card computer development interface ( BCCDI ) and the 68340 platform board ( PFB )

DEVICE EVALUATION:
MC68340

OPERATING REQUIREMENTS:
Power Supply: +5 Vdc and a RS-232C compatible terminal

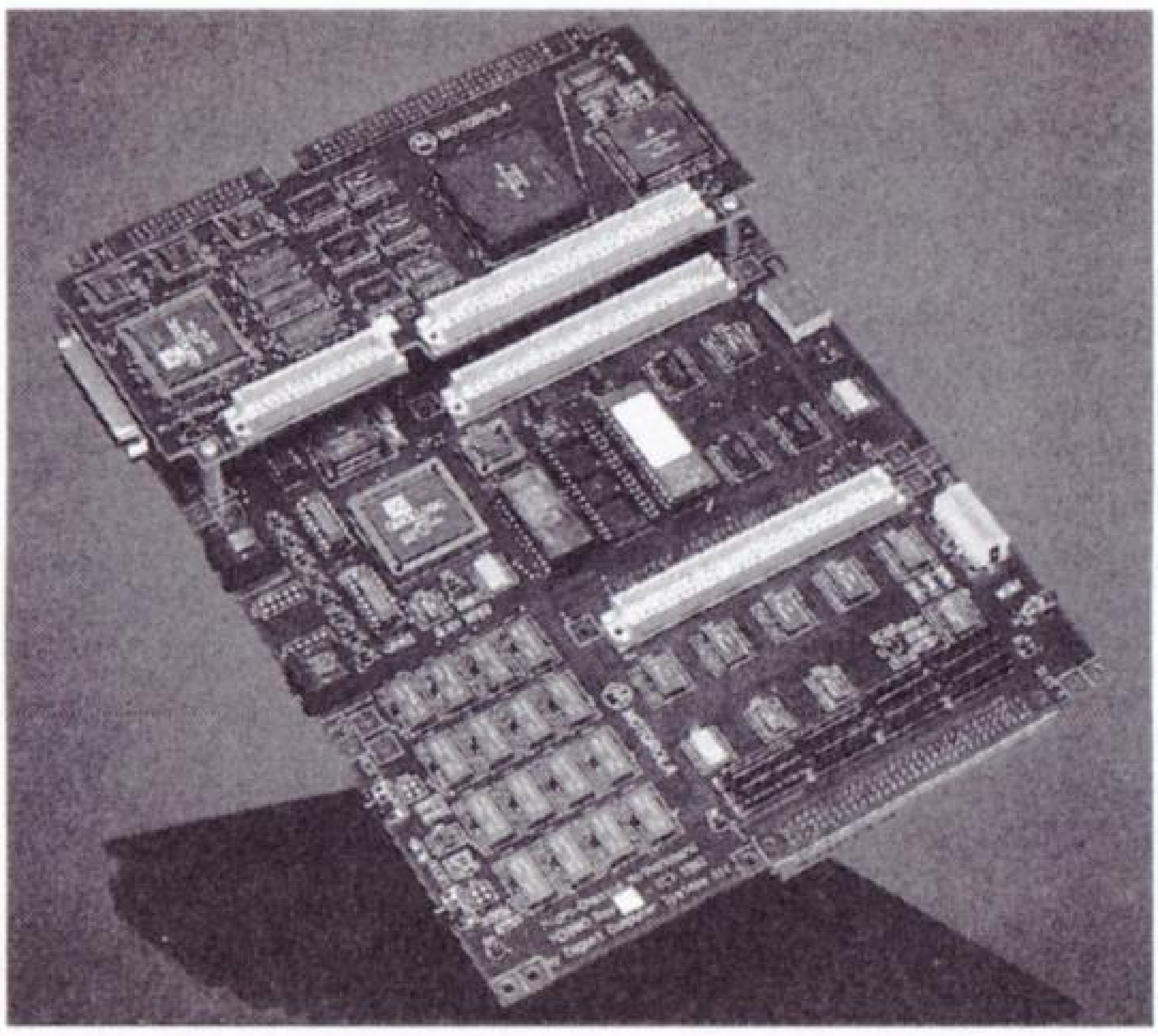
FEATURES:
BUSINESS CARD COMPUTER ( BCC )
* The BCC consist of a 2.3" by 3.9" PCB
* MC68340 integrated processor with DMA
* 64K by 16 bit EPROM
* 32K by 16 bit RAM
* RS-232C compatible terminal/host I/O port
* The BCC EPROM contains a debug monitor called 340Bug

BUSINESS CARD COMPUTER DEVELOPMENT INTERFACE BOARD ( BCCDI )
* The BCCDI consist of a 2.25" by 3.5" PCB
* MC68HC811E2 MCU
* Motorola custom hardware breakpoint chip
* RS-232C terminal/host computer I/O port
* EVSbug debug monitor

PLATFORM BOARD
* Four 32K by 8 RAM/EPROM sockets ( unpopulated )
* External power supply connector ( 5V and ground )
* Two RS-232C I/O ports
* Logic Analyzer interface port
* Background mode interface port

( More Details: Order BR753/D )

# M68EC0x0IDP



DEVICE EVALUATION:
MC68EC000, MC68EC020, MC68EC030, and MC68EC040 depending on CPU Module.

OPERATING REQUIREMENTS:
RS-232 ASCII terminal or host computer ( preferred ) with RS-232 serial port.

FEATURES:

- Includes an Integrated Systems ROM68K™ and Intermetrics SmartRom™ debug software which enables tracing, assembling, disassembling, and downloading.
- Additonal design, debug, and evaluation through optional software.
- Functions as a final test and fault analysis tool for target systems.
- Single CPU slot accepts 68EC000, 020, 030, or 040 CPU modules.
- Accepts up to five I/O modules.
- Two RS-232 serial I/O channels.
- Battery backed clock/calendar 2040 bytes SRAM.
- Two 32 pin EPROM sockets.
- 32 bit data, and 24 bit address buses clocked at 25 MHz.
- Two Mbytes of 5/2/2/2 Burst Mode DRAM.
- Individual interrupt and bus request/acknowledge pairs per I/O slot.
- Maximum data rate is 36 mbs with 5/2/2/2 burst transfers.
- ROM monitored by resident ROM68K™ and MON68.
- Optional high speed memory board available to emulate different types of memory and different sized devices.
- Bus arbitration circuitry, an Address Translation Map, local bus, Data bus translation (CPU000 only ), and a 25 MHz MC68882 FPU ( CPU020 and CPU030 only ).

DIMENSIONS: Width 7.5" Length 10.7"

( More Details: Order M68KIDP/D )

M68EC000IDP
M68EC020IDP
M68EC030IDP
M68EC040IDP

# DSP56000ADSx

DEVELOPMENT SYSTEM USES:

- * DSP Algorithm Development & Algorithm Acceleration
- * Application Hardware Development
- * DSP56000/01 Emulation

COMPONENTS:

- * Application Development Module (ADM)
- * Host Computer Bus Interface Board(s) A-PC, B-MAC, C-SUN
- * User Interface Program (s)

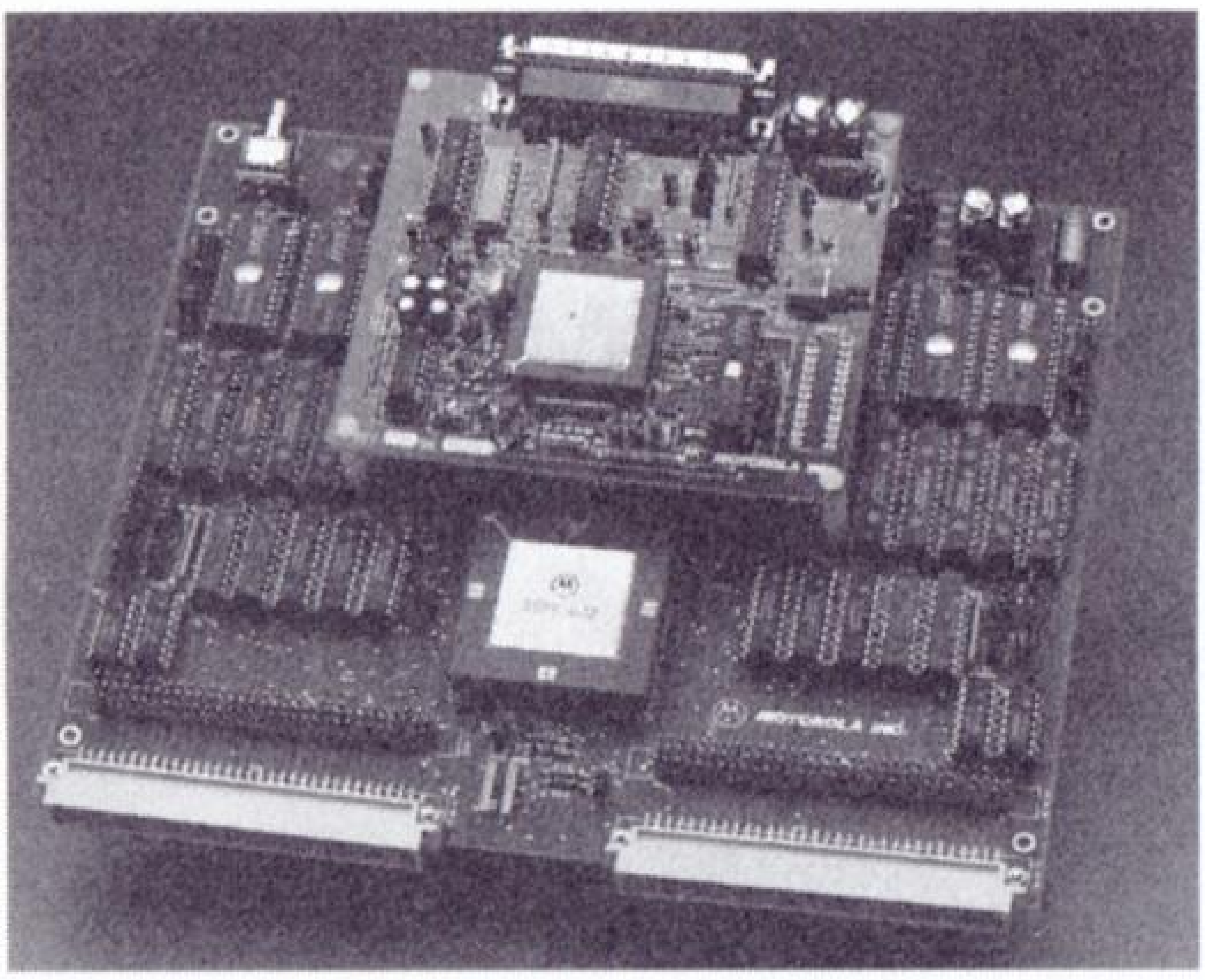
HARDWARE FEATURES:

- * Resident DSP56001 Processor; Full Speed Operation at 20 MHz
- * 8K/32K Words of Zero-wait state Configurable RAM
- * 1K Words of Zero-wait state Monitor ROM
- * Access to All DSP56001 Pins with 96-pin EURO-card connector
- * NO External Power Supply required

SOFTWARE FEATURES:

- * Multiple DSP Support, Conditional Breakpoints, Resident Assembler/Disassembler, Command MACROS, Extensive On-line Help, and Host Computer File I/O Support
  (More Details: Order BR517/D and BR382/D)

# DSP96000ADSx



DEVELOPMENT SYSTEM USES:

- DSP Algorithm Development & Algorithm Acceleration
- Application Hardware Development
- DSP96002 Emulation

COMPONENTS:

- Application Development Module ( ADM )
- Host Computer Bus Interface Board( s ) A-PC, B-MAC, C-SUN
- User Interface Program ( s )

HARDWARE FEATURES:

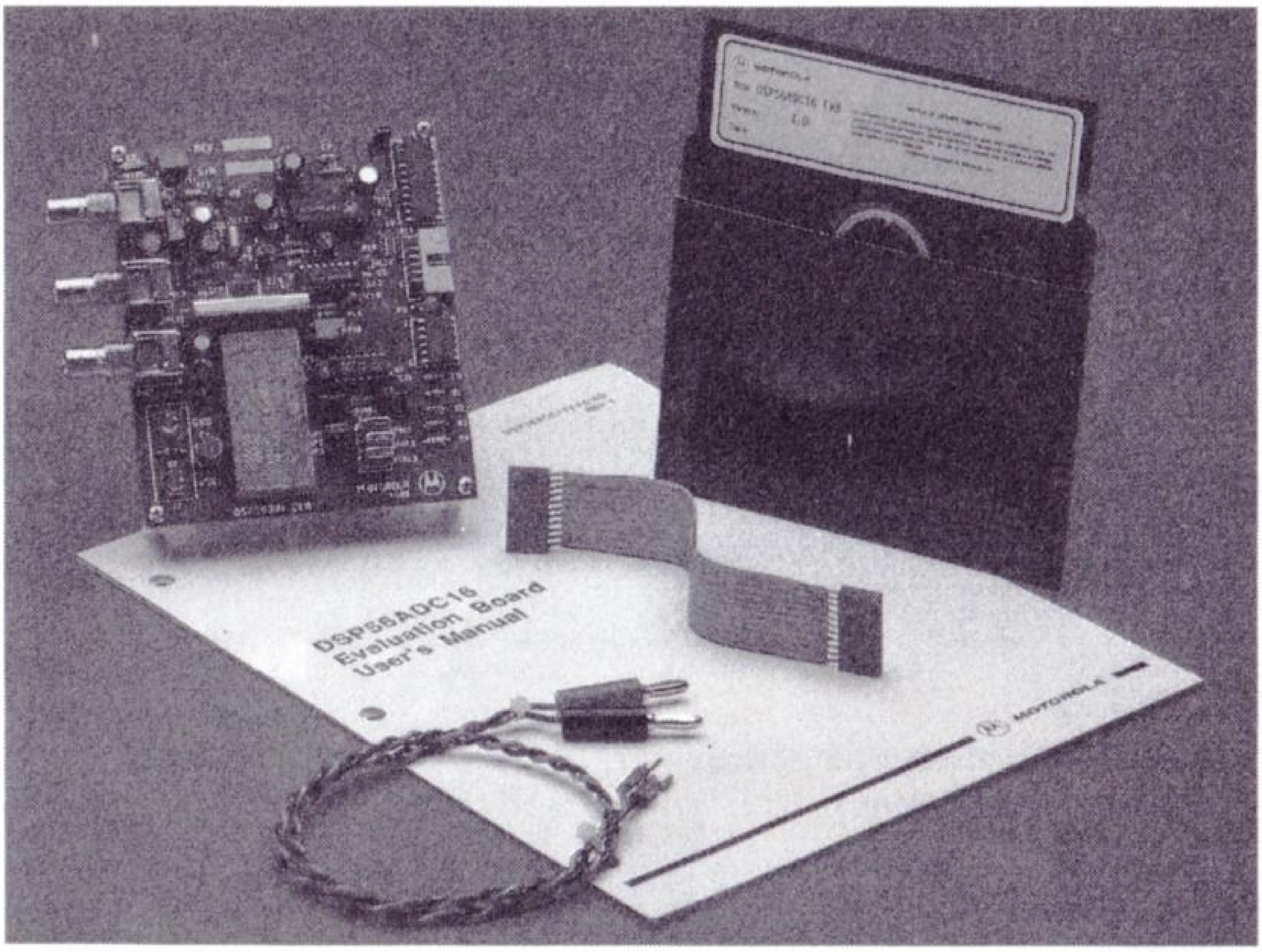
- Resident DSP96002 Processor
- 128K words of configurable static RAM expandable to 512K words
- 2K words of EPROM with sockets expandable to 64K words
- Stand-alone operation of ADM after initial development
- Full support of multiple memory data maps
- Two sets of 96-pin connectors provide access to all DSP96002 pins
- OnCe command converter card for non-intrusive real-time emulation

SOFTWARE FEATURES:

- Single/multiple stepping through DSP96002 object programs
- Conditional or unconditional software and hardware breakpoints
- Program patching using a single-line assembler/disassembler
- Session and/or command logging for later reference
- Loading and saving of files to/from ADM memory
- Macro command definition and execution
- Display enable/disable of registers and memory
- Debug commands which support multiple DSP96002 development

( More Details: Order BR749/D )

# DSP56ADC16EVB



DEVICE EVALUATION:
DSP56ADC16S-16-Bit A/D Converter

COMPONENTS:

- Evaluation Board ( EVB )
- EVB Program Routines
- DSP56000ADS Interface Cable

HARDWARE FEATURES:

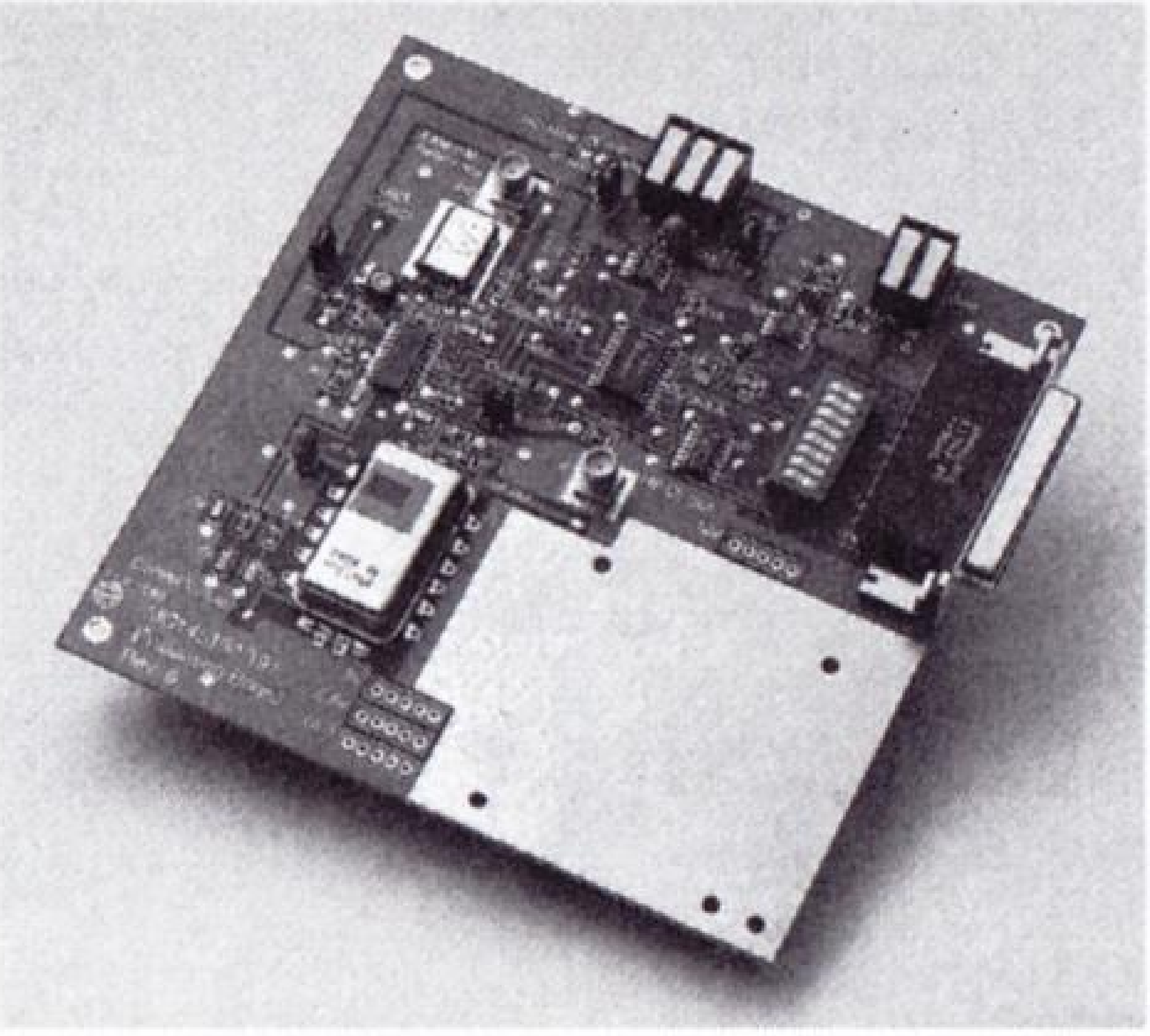
- Complete 16-Bit A/D D/A System
- Direct Interface to DSP56000ADS Board
- Jumper Selectable Sampling Rate
- On-Board Crystal Oscillator or External Clocking Capability
- Fully Differential or Single Ended Inputs
- Stand-alone Loop-Through or Host Serial Interface Mode
- Single Supply Operation ( +5 V )
- Jumper Selectable 20 kHz Reconstruction Filter
- Expansion Connector for User I/O Configuration

SOFTWARE FEATURES:

- General Polled I/O Loops, General Interrupt I/O Loops,
- Sin ( X )/X Correction Finite Impulse Response ( FIR ) Filter I/O Routine
- Fast Fourier Transfer ( FFT ) Evaluation Program

( More Detail: Order BR718/D )

# MC145190/191EVK



DEVICE EVALUATION:
MC145190 and MC145191 frequency synthesizers
MC145192 ( with board modifications )

OPERATING REQUIREMENTS:
Power Supply: 5Vdc.
IBM PC compatible

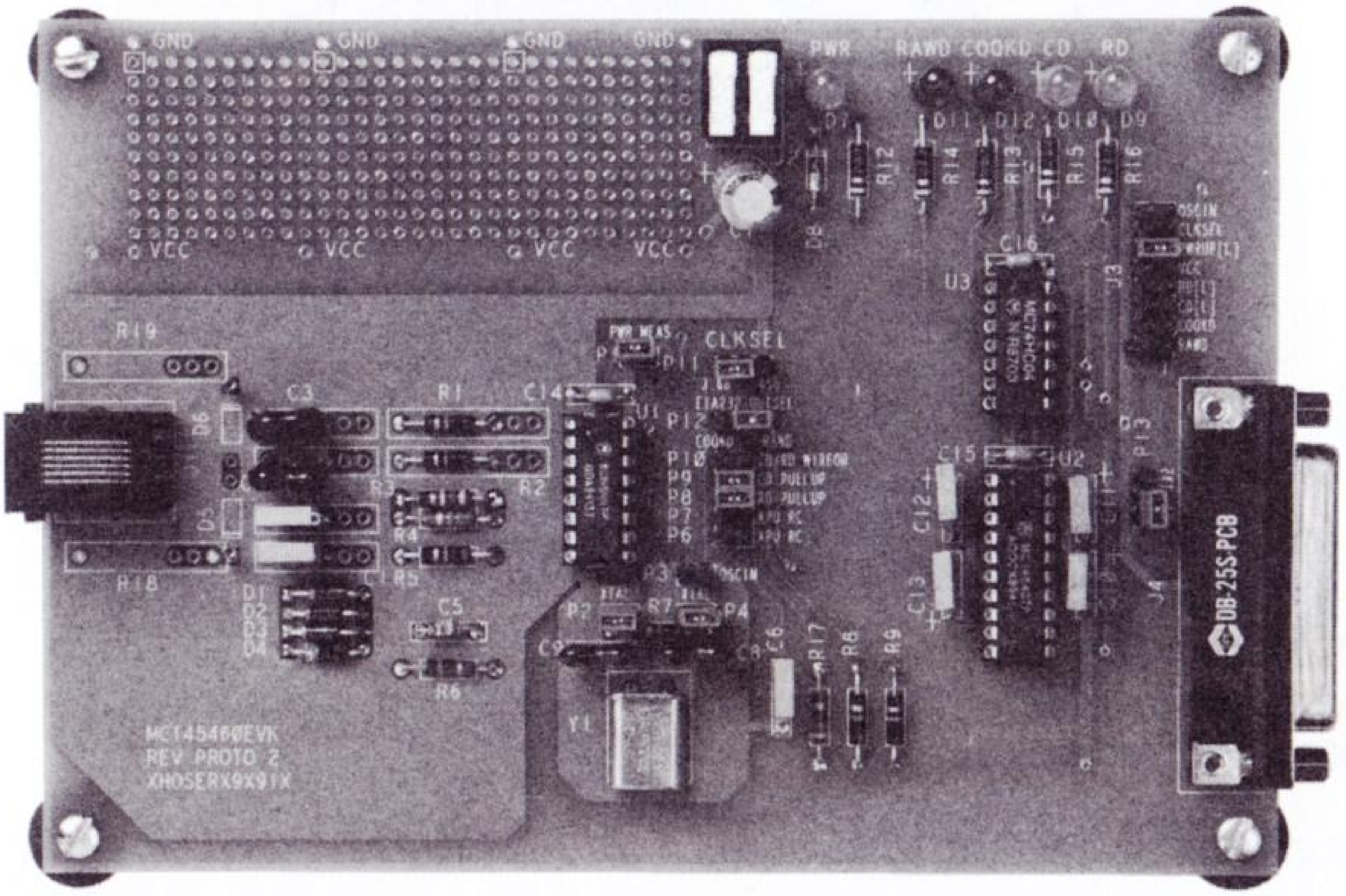
FEATURES:
GENERAL
- Turnkey design includes PLL devices, low pass filter, and voltage controlled oscillator.
- Up to three EVKs can be operated through one PC printer port.
- Two or three board cascades are constructed with only three output lines ( clock, data, and load from the printer card ).
- Contains all the components for use of either an external or on board crystal reference.
- Five element loop filter included.
- Fully documented.

MC145190/MC145191
- Single package synthesizers with serial interface capable of direct usage up to 1.1 GHz.
- Interfaces are both SPI and MICROWIRE™ compatible.
- No address or steering bits are required because of patented BitGrabber™ registers.
- Gain of current source/sink phase/ frequency detectors controllable via serial port.
- 7 mA dynamic current consumption.

SOFTWARE
- Menu driven control program written in turbo pascal with source code provided on a 3.5" PC compatible disk.
- Frequency range of operation, step size, and reference frequency can be changed in the control program.
- Byte-oriented format is used to allow for easy PLL programming.

( More Details: Order MC145190EVK/D )

# MC145460EVK


GND
GND
GND
GND
VCC
VCC
VCC
VCC
PWR
RAWD
COOKD
CD
RD
CLKSEL
U3
U2
Y1
DB-25S PCB
MC145460EVK
REV PROTO 2

DEVICE EVALUATION:
MC145447 Calling Line ID Receiver with Ring Detector

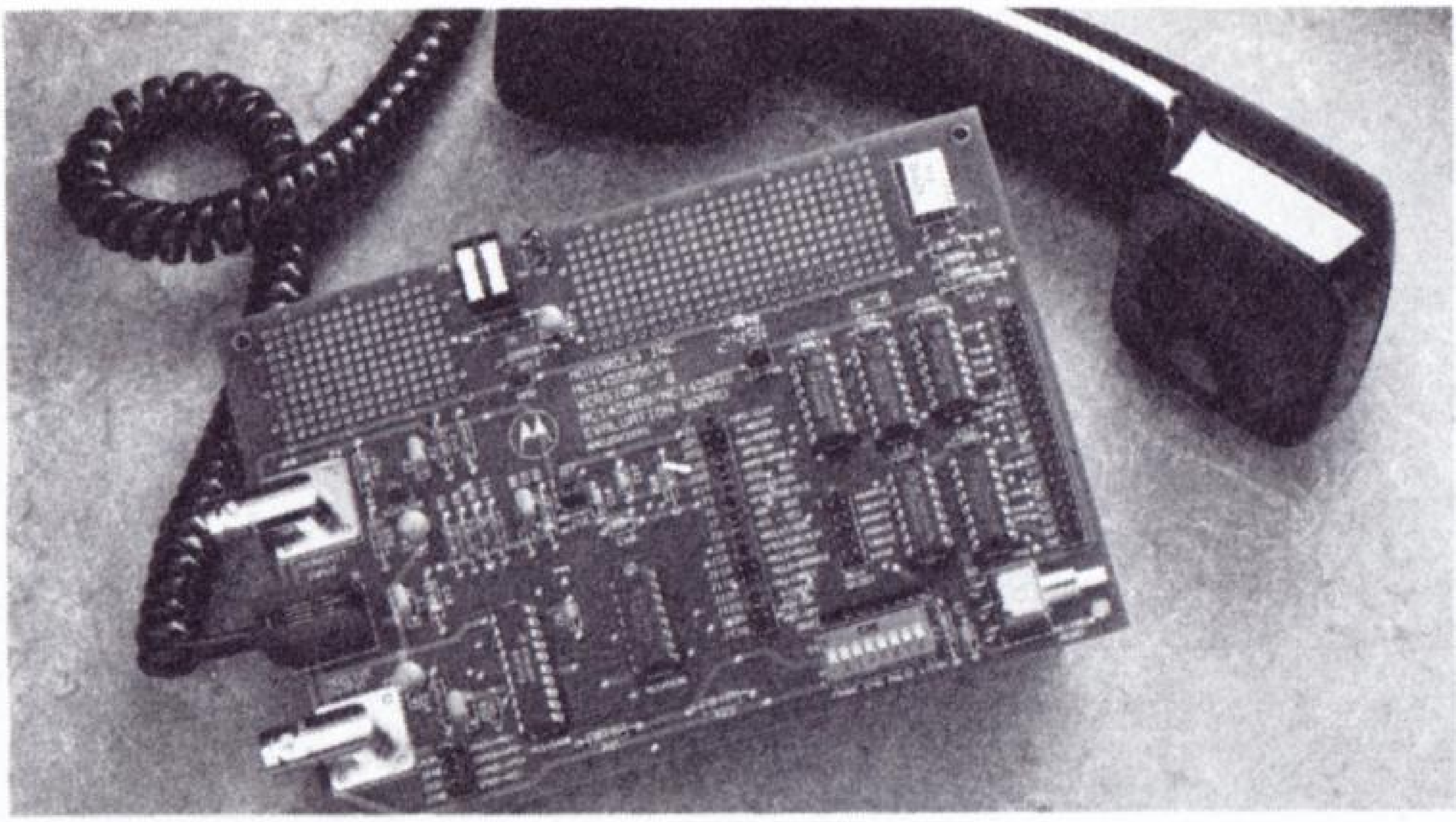
OPERATING REQUIREMENTS:
Power Supply: +5 Vdc +3 Vdc

FEATURES:

- * Facilitates development and testing of products that support the Bellcore Customer Premise equipment. (CPE interface)
- * Easy clip on access to key MC145447 signals.
- * Generous prototype area.
- * Configurable for automatic or external power control.
- * EIA-232 and Logic Ports connect to any PC or MCU development platform.
- * Carrier Detect, Ring Detect, and Data Status LEDs.
- * Input protection circuitry.
- * Allows easy incorporation of MC145447 into any FAX, PBX, key system, answer machine, CND adjunct box, or other telephone equipment.
- * Fully documented.

(More Details: Order MC145460EVK/D)

# MC145536EVK



DEVICE EVALUATION:
MC145480 Single +5V supply PCM Codec Filter.
MC145532 ADPCM Transcoder.

OPERATING REQUIREMENTS:
Power Supply: 5Vdc.

FEATURES:
General

* Provides stand alone evaluation on a single board.
* Easily interface to application and test equipment.
* Convenient access to key signals.
* Generous prototype area.
* A/A, A/D, and D/A connections at 64 kbps PCM, and 32, 24, or 16 kbps ADPCM.
* UDR design layout rules for core cell applications.
* Handset included.
* Fully documented.

MC145480

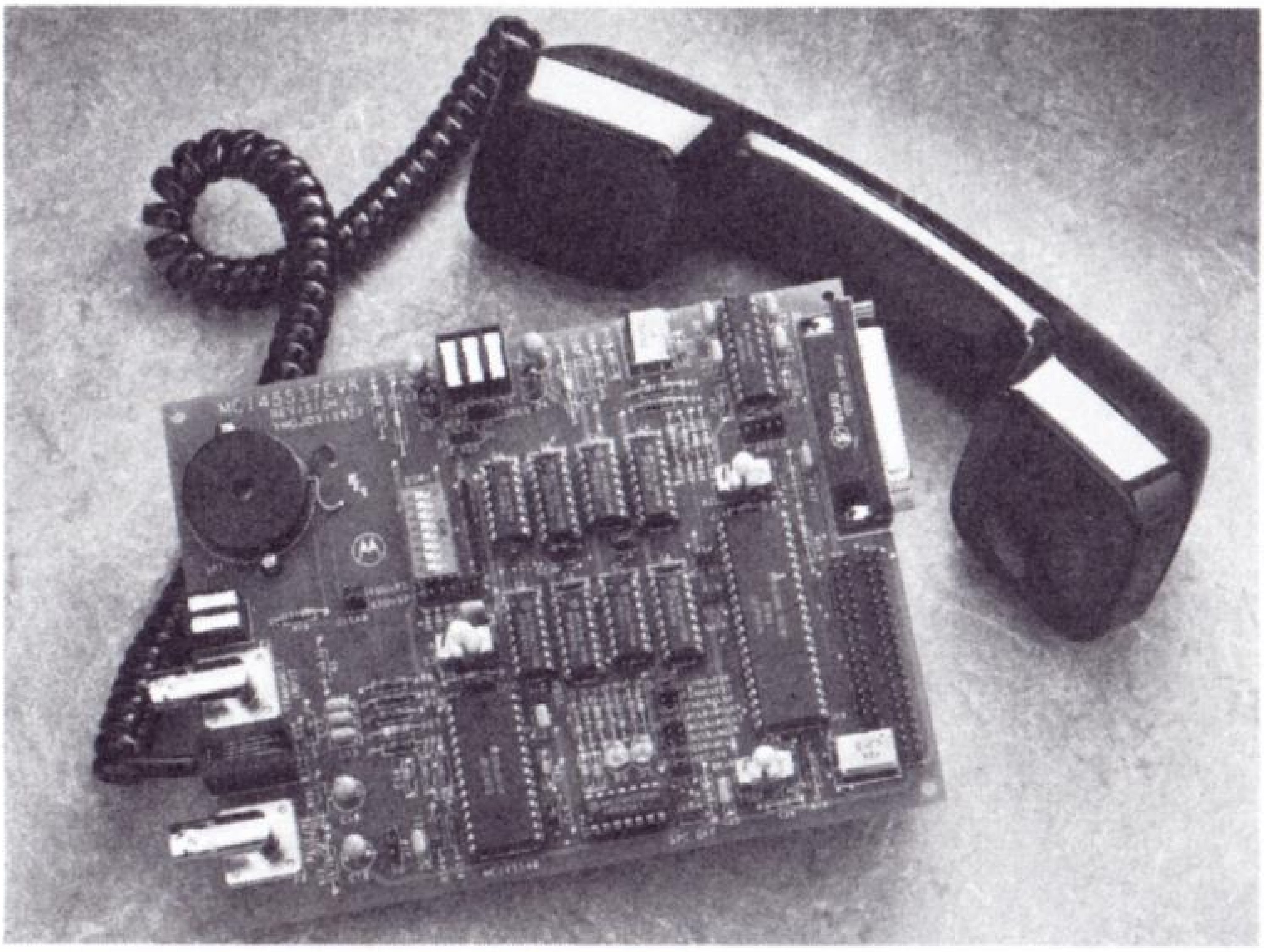
* Typical power dissipation of 25 mW, Power Down of <1 mW.
* Conformance to CCITT and Bell specifications.
* Mu-law or A-law companding.
* Differential analog circuit design for lowest possible noise.

MC145532

* Single-chip full duplex PCM to ADPCM encoder and ADPCM to PC decoder.
* High audio quality at reduced bit rates.
* PCM data rate of 64 kbps.
* ADPCM data rates of 32, 24, or 16 kbps.
* Conforms to CCITT and ANSI ADPCM Standards.
* Custom DSP engine optimized for ADPCM algorithm.

( More Details: Order MC145436EVK/D )

# MC145537EVK



DEVICE EVALUATION: MC145540 ADPCM Codec

OPERATING REQUIREMENTS:
Power Supply: +5Vdc +3Vdc

FEATURES:

- * Clock Generator circuitry and MCU interface to facilitate MC145540 evaluation.
- * Supports MC155540 +5V OR +3V operation.
- * Ideal for battery powered and AC applications.
- * Handset Interface/Handset included.
- * MC145537EVK remains functional without a computer terminal.
- * Easy access to all Analog and Digital data, Clock, and Enable signals.
- * EIA-232-D/V.28 Terminal Control.
- * A/D Path at 64 kbps PCM, and 32, 24 or 16 kbps ADPCM.
- * D/A Path at 64 kbps PCM, and 32, 24, or 16 kbps ADPCM.
- * Supports A/A, and D/D hardware loop-backs.
- * Ability to connect two MC145537EVKs back-to-back.
- * Will connect MC145537EVK and MC145536EVK back-to-back for +5V operation only.
- * MC68HC705C8 Resident Monitor.
- * Stand alone or terminal operation.
- * Device driver for serial port interface.
- * Ability to read/write SCP registers in MC145540.
- * Registers can be individually displayed and modified.
- * Help menu.

( More Details: Order MC145537EVK/D )

# MPC601DM HERCULES

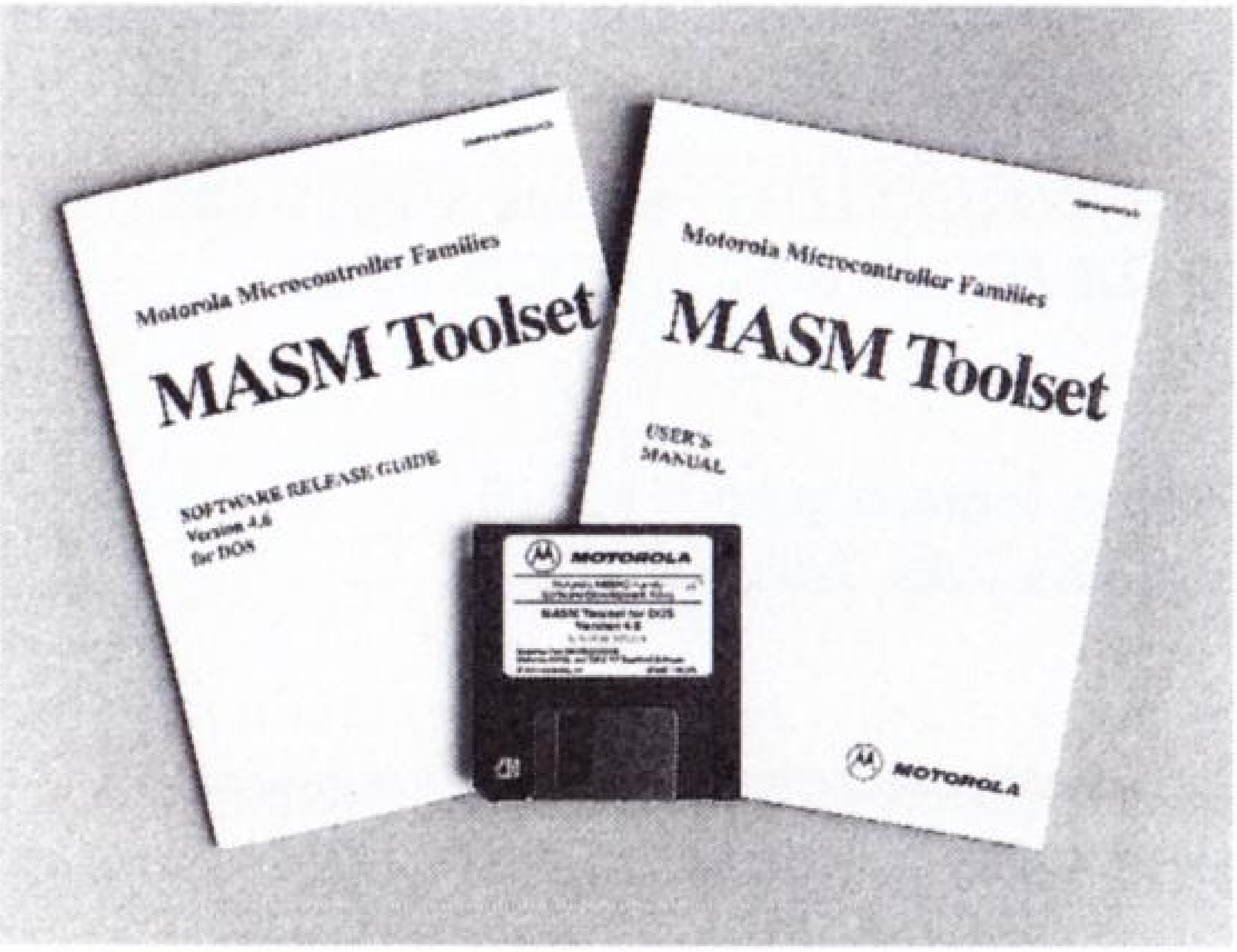
No
Photo
Available

Hercules is a single-board computer which is low cost and easy to manufacture. It is a general purpose computing engine suitable for MPC601 evaluation and limited software development. It is intended as a vehicle for gaining in-depth, hands-on design experience.

FEATURES:

- A single MPC601 MPU operating between 25 to 50 MHz, configured as the only possible bus master in the system
- 8 MB of DRAM providing 1 to 32 byte read and write transfers
- Two 256KB 8 bit EPROM sockets supporting 1 to 32 byte read transfers
- Two serial RS232C channels
- 16 -bit event timer
- Programmable parallel I/O
- Bi-directional Centronics compatible interface
- Reset push-button switch causing the hardware reset
- Abort push-button switch causing the MPC601 system reset input
- Two green LEDs, indicating the state of the power rails ( 5V and 3.6V )
- Two red LEDs, indicating the status of the MPC601( Run States ), and 1 yellow LED showing the status of the reservation coherency bit
- Provision for a debug connector comprising the main address, data, and control signals, including a chip select signal and an interrupt signal

# M68SMASMAB


Motorola Microcontroller Families
MASM Toolset
SOFTWARE RELEASE GUIDE
Version 4.6
for DOS
Motorola Microcontroller Families
MASM Toolset
USER'S
MANUAL
MOTOROLA
MOTOROLA

DEVICES SUPPORTED:
68HC05, 68HC08, 68HC11, and 68HC16 families

OPERATING REQUIREMENTS:
DOS-Compatible PC

FEATURES:

- Includes a 3.5: floppy, user's guide, and a software release guide
- Relocatable or absolute object modes
- Switch selectable processor support
- Full instruction sets
- All available addressing modes
- Full macro capability with nesting
- Include File support
- Linking of multiple source files
- Optimization for long and short branches
- Generates Motorola S-Records
- 256 character symbol names
- Partial linking
- Common Object File Format
- User-controlled assembly listings
- Cross reference listings
- Symbol table listings
- Supports instruction sets with a common syntax and with language extensions that ease the upward migration path without sacrificing any of the speed or efficient memory utilization that assembly language provides

OTHER SOFTWARE:
The MASM also comes in a student version at a reduced price. The student version is identical, but does not include support service. Use part number S68SMASMAB.

# ELECTRONIC BULLETIN BOARDS

MICROCONTROLLERS-FreeWare, 512-891-3733
68HC05, 68HC08, 68HC11, 68HC16, 68300

Settings: 8 data, no parity, 1 stop bit
Baud Rate: 2400, 1200, 300

MICROPROCESSORS-AESOP, 1-800-843-3451
68000, 68340

Settings: N/8/1/F
Baud Rate: 14400, 9600, 2400

DIGITAL SIGNAL PROCESSING-DrBUB, 512-891-3771
56000, 56001, 56100, 96002

Settings: 8 data, no parity, 1 stop bit
Baud Rate: 9600, 4800, 2400, 1200, 300

# INSTRUCTOR TRAINING SUPPORT

As part of our on-going academic support, Motorola offers free instruction and tutorial for faculty members at our Training Center. This allows educators an ideal opportunity to keep abreast of the fast-moving electronics industry and learn first-hand about the state-of-the-art semiconductor devices that shape our future.

Training courses include introductory and advanced classes on a wide variety of Motorola semiconductors. Classes are open on a space available basis at our training facility.

Learn about today's technology and prepare your students to be tomorrow's industry leaders.

For more information on how to take advantage of these free Motorola classes, send us a letter on your institution's letterhead, and we will send you a catalog and schedule of classes. (Detailed course information and schedule are in BR348/D)

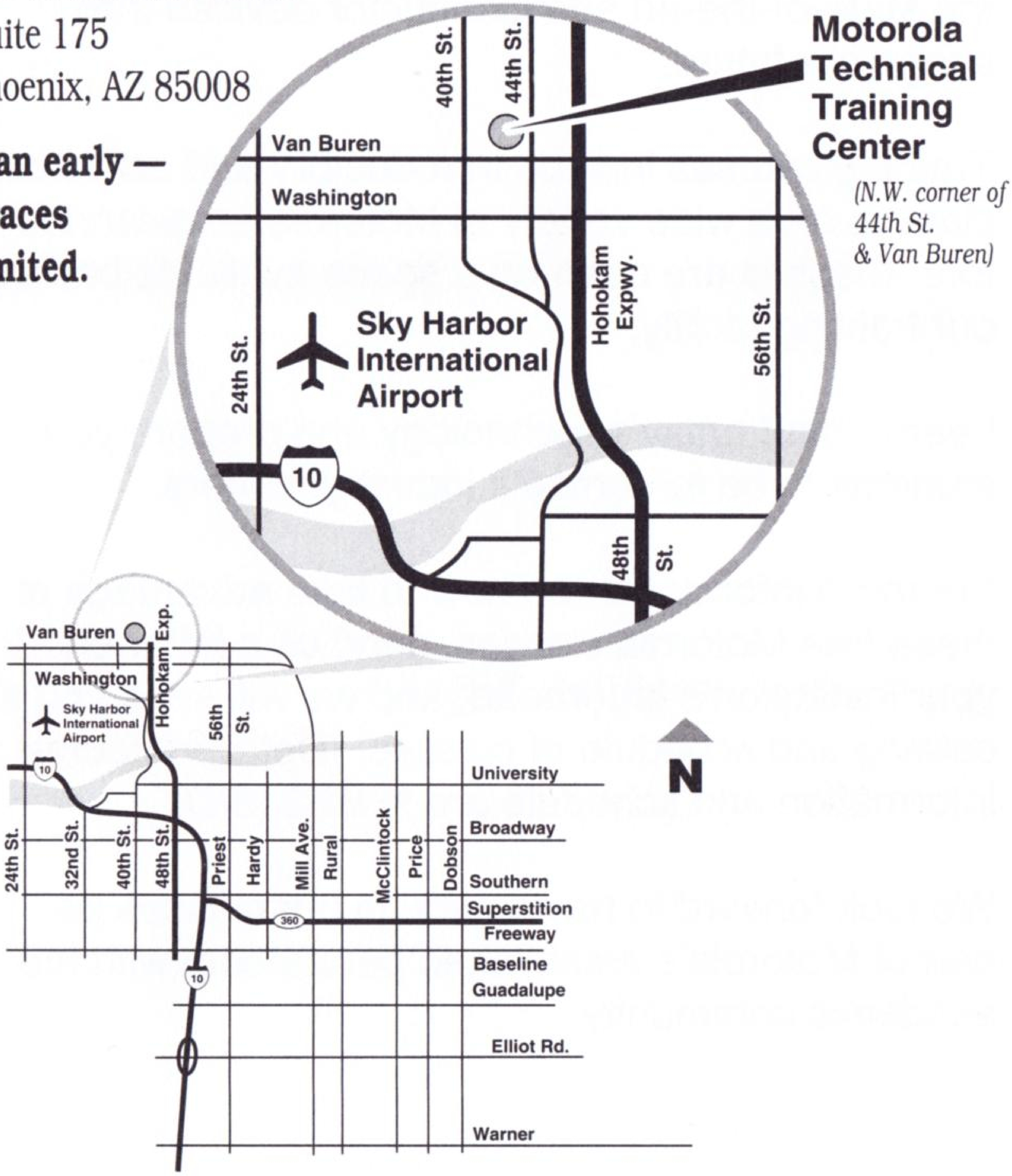
We look forward to having you in our classes as part of Motorola's established partnership with the academic community.

# TRAINING CENTER LOCATION

## PHOENIX

Motorola Technical Training
(800) 521-6274
Motorola Technical Training
432 North 44th Street
Suite 175
Phoenix, AZ 85008

**Plan early — spaces limited.**



Motorola Technical Training Center
(N.W. corner of 44th St. & Van Buren)
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44th St.
Van Buren
Washington
Hohokam Expwy.
56th St.
24th St.
Sky Harbor International Airport
10
48th St.
Van Buren
Washington
Hohokam Exp.
Sky Harbor International Airport
56th St.
10
24th St.
32nd St.
40th St.
48th St.
Priest
Hardy
Mill Ave.
Rural
McClintock
Price
Dobson
University
Broadway
Southern
360
Superstition Freeway
Baseline
Guadalupe
10
Elliot Rd.
Warner
N

**To ensure timely enrollment, call (602) 302-8008**

# COURSES OFFERED

POWER PC™ - Trademark of IBM Corporation

DSP56000/1 MICROPROCESSOR

DSP56100 MICROPROCESSOR FAMILY

MC68HC08 MICROCONTROLLER (New Course TBA)

MC68HC16 MICROCONTROLLER

TPU MICROCODE

MC68302 COMMUNICATIONS CONTROLLER

MC68340 INTEGRATED PROCESSOR

MC68360 QUICC - QUAD INTEGRATED COMMUNICATIONS CONTROLLER

M68/040/060 A/B MICROPROCESSOR

MC68HC05 MICROCONTROLLER

MC68HC11 MICROCONTROLLER

MC68332 EMBEDDED CONTROLLER

# CURRICULUM SUPPORT

Motorola offers free, up-to-the-minute course materials to help instructors develop classes on state-of-the-art microprocessor products and applications. We can provide all of the materials needed for semester-length classes, complete, intact, and structured for immediate classroom use by the instructor. Or, you can modify the coursework to meet your needs. Course materials include manuals, course notes, overhead presentations, and all support documentation.

A variety of packaged courses are available to help you and your students keep pace with the latest developments in microprocessor technology.

Motorola's product line is one of the broadest and most diversified in the industry: over 50,000 devices. Our products represent the leading edge of real-world technology and reflect our commitment to continue shaping the evolution of electronics in all corners of the world, starting with the academe.

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| Newark Electronics | (205)837-9091 |
| Time Electronics | (205)721-1133 |

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| Newark | (714)634-8224 |

#### Rocklin

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| Richardson Electronics | (615)594-5600 |

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| Time Electronics | (303)721-8882 |

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| Hall-Mark Electronics | (203)271-2844 |

#### Danbury

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| Hamilton/Avnet Electronics | (203)743-6077 |

#### Southbury

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| Time Electronics | (203)271-3200 |

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| Wallingfort | Arrow/Schweber Electronics | (203)265-7741 |
| Windsor | Newark | (203)683-8860 |

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| Altamonte Springs | Future Electronics | (407)767-8414 |
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| | Hall-Mark Electronics | (813)541-7440 |
| Deerfield Beach | Arrow/Schweber Electronics | (305)429-8200 |
| Ft. Lauderdale | Hamilton/Avnet Electronics | (305)767-6377 |
| | Time Electronics | (305)484-1778 |
| Lake Mary | Arrow/Schweber Electronics | (407)333-9300 |
| Orlando | Hamilton/Avnet Electronics | (407)628-3888 |
| | Newark | (407)896-8350 |
| | Time Electronics | (407)841-6565 |
| Plantation | Newark | (305)424-4400 |
| Pompano Beach | Hall-Mark Electronics | (305)971-9280 |
| Tampa/St. Petersburg | Hamilton/Avnet Electronics | (813)573-3930 |
| | Newark | (813)287-1578 |
| | Time Electronics | (407)841-6565 |
| Winter Park | Richardson Electronics | (407)644-1453 |

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| Atlanta | Time Electronics | (404)351-3545 |
| Duluth | Arrow/Schweber Electronics | (404)497-1300 |
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| | Hamilton/Avnet Electronics | (404)446-0611 |
| Norcross | Future Electronics | (404)441-7676 |
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| Bensenville | Hamilton/Avnet Electronics | (708)860-7700 |
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| Itasca | Arrow/Schweber Electronics | (708)250-0500 |
| LaFox | Richardson Electronics | (708)208-2401 |
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| | Time Electronics | (708)303-3000 |
| Wooddale | Hall-Mark Electronics | (708)860-3800 |

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| | Time Electronics | (708)303-3000 |
| Ft. Wayne | Newark | (219)484-0766 |

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| | Richardson Electronics | (716)264-1100 |
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| Arrow/Schweber Electronics | (216)248-3990 |

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Tulsa

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| Future Electronics | (503)645-9454 |
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Portland

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| Hamilton/Avnet Electronics | (503)627-0201 |
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| Hamilton/Avnet Electronics | (814)455-6767 |

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| Newark | (215)265-0933 |

Montgomeryville

| | |
|---|---|
| Richardson Electronics | (215)628-0805 |

Philadelphia

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|---|---|
| Hall-Mark Electronics | (215)355-7300 |
| Time Electronics | (609)596-6700 |

Pittsburgh

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| Arrow/Schweber Electronics | (412)963-6807 |
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| Time Electronics | (614)794-3301 |

**TENNESSEE**

Franklin

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| Richardson Electronics | (615)791-4900 |

Knoxville

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| Future Electronics | (214)437-2437 |
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| Richardson Electronics | (214)239-3680 |
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| Arrow/Schweber Electronics | (713)530-4700 |
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| Wyle Laboratories | (713)879-9953 |

Richardson

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| Newark | (214)235-1998 |

**UTAH**

Salt Lake City

| | |
|---|---|
| Arrow/Schweber Electronics | (801)973-6913 |
| Future Electronics | (801)972-8489 |
| Hamilton/Avnet Electronics | (801)972-2800 |
| Newark | (801)261-5660 |

West Valley City

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|---|---|
| Hall-Mark Electronics | (801)972-1008 |
| Time Electronics | (801)973-8494 |
| Wyle Laboratories | (801)974-9953 |

**WASHINGTON**

Bellevue

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|---|---|
| Almac Electronics Corp. | (206)643-9992 |
| Future Electronics | (206)881-8199 |
| Hall-Mark Electronics | (206)547-0415 |
| Newark | (206)641-9800 |
| Richardson Electronics | (206)646-7224 |

Redmond

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|---|---|
| Hamilton/Avnet Electronics | (206)241-8555 |
| Time Electronics | (206)820-1525 |
| Wyle Laboratories | (206)881-1150 |

Spokane

| | |
|---|---|
| Arrow/Schweber Electronics Corp. | (509)924-9500 |

**WISCONSIN**

Brookfield

| | |
|---|---|
| Arrow/Schweber Electronics | (414)792-0150 |

Milwaukee

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|---|---|
| Time Electronics | (708)303-3000 |

New Berlin

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|---|---|
| Hall-Mark Electronics | (414)797-7844 |
| Hamilton/Avnet Electronics | (414)784-4510 |

Waukesha

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|---|---|
| Future Electronics | (414)786-1884 |

Wauwatosa

| | |
|---|---|
| Newark | (414)453-9100 |

## UNITED KINGDOM:

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|---|---|
| Avnet/Access | (44) 462 488 500 |
| Arrow | (44) 234 3472 111 |
| Future | (44) 753 52 1193 |
| Macro | (44) 628 604 383 |
| ESD | (44) 279 44 1144 |

## SPAIN:

| | |
|---|---|
| EBV | (34) 1 358 86 08 |
| Selco S.A. | (34) 1 326 42 13 |

## SWITZERLAND:

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|---|---|
| EBV | (41) 1 740 10 90 |
| Elbatex AG | (41) 56 275 111 |

## SCANDINAVIA:

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|---|---|
| Field OY | (35) 80 757 10 11 |
| ITT Multikomponent AB | (46) 8 830 020 |
| Avnet Nortec (S) | (46) 8 705 1800 |
| Avnet Nortec (DK) | (45) 42 842 000 |
| Danelec A/S | (45) 39 690 511 |
| Avnet Nortec (N) | (47) 6 684 210 |

## ITALY:

| | |
|---|---|
| Adelsi SpA | (39) 2 38103100 |
| EBV | (39) 2 66017111 |
| Silverstar SpA | (39) 2 66 12 51 |

## GERMANY:

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|---|---|
| EBV Elektronik GmbH | (49) 89 456100 |
| Enatechnik A. Neye GmbH | (49) 4106-6120 |
| Future Electronics GmbH | (49) 89-957 195-0 |
| Jermyn GmbH | (49) 6431-5080 |
| Mutron, Muller GmbII & Co | (49) 421-305 60 |
| Sasco GmbH | (49) 89-46110 |
| Spoerle Electronic | (49) 6103-304-0 |

## FRANCE:

| | |
|---|---|
| EBV Elektronik | (33) 1 64 68 86 00 |
| Arrow | (33) 1 49 78 49 78 |
| Scaib | (33) 1 46 87 23 13 |
| Avnet Comp. | (33) 1 49652500 |

## AUSTRIA:

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|---|---|
| EBV | (43) 222 894 1774 |
| Elbatex | (43) 222 86 3211 |

## BENELUX:

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|---|---|
| Diode Belgium | (32) 2 725 4660 |
| Diode Netherlands | (31) 4054 54 30 |
| EBV Belgium | (32) 2 720 9936 |
| EBV Netherlands | (31) 3465 623 53 |
| Rodelco/Lemaire | (32) 2 460 0560 |
| Rodelco Holland | (31) 767 84911 |

## CANADA:

### ALBERTA

#### Calgary

| | |
|---|---|
| Electro Sonic Inc. | (403)255-9550 |
| Future Electronics | (403)250-5550 |
| Hamilton/Avnet Electronics | (800)236-2484 |

#### Edmonton

| | |
|---|---|
| Future Electronics | (403)438-2858 |
| Hamilton/Avnet Electronics | (800)663-5500 |

### BRITISH COLUMBIA

#### Vancouver

| | |
|---|---|
| Electro Sonic Inc. | (609)273-2911 |
| Future Electronics | (604)294-1166 |
| Hamilton/Avnet Electronics | (604)420-4101 |

### MANITOBA

#### Winnipeg

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|---|---|
| Electro Sonic Inc. | (209)783-3105 |
| Future Electronics | (204)786-7711 |
| Hamilton/Avnet Electronics | (204)942-3992 |

### ONTARIO

#### Ottawa

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|---|---|
| Arrow Electronics | (613)226-6903 |
| Electro Sonic Inc. | (613)728-8333 |
| Future Electronics | (613)820-8313 |
| Hamilton/Avnet Electronics | (613)226-1700 |

#### Toronto

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|---|---|
| Arrow Electronics | (416)670-7769 |
| Electro Sonic Inc. | (416)494-1555 |
| Future Electronics | (416)638-4771 |
| Hamilton/Avnet Electronics | (416)677-7432 |
| Richardson Electronics | (416)458-5333 |

### QUEBEC

#### Montreal

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|---|---|
| Arrow Electronics | (514)421-7411 |
| Future Electronics | (514)694-7710 |
| Hamilton/Avnet Electronics | (514)335-1000 |

#### Quebec City

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|---|---|
| Arrow Electronics | (418)687-4231 |
| Future Electronics | (418)682-8092 |

#### St. Laurent

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|---|---|
| Richardson Electronics | (514)748-1770 |

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**Suite 450**
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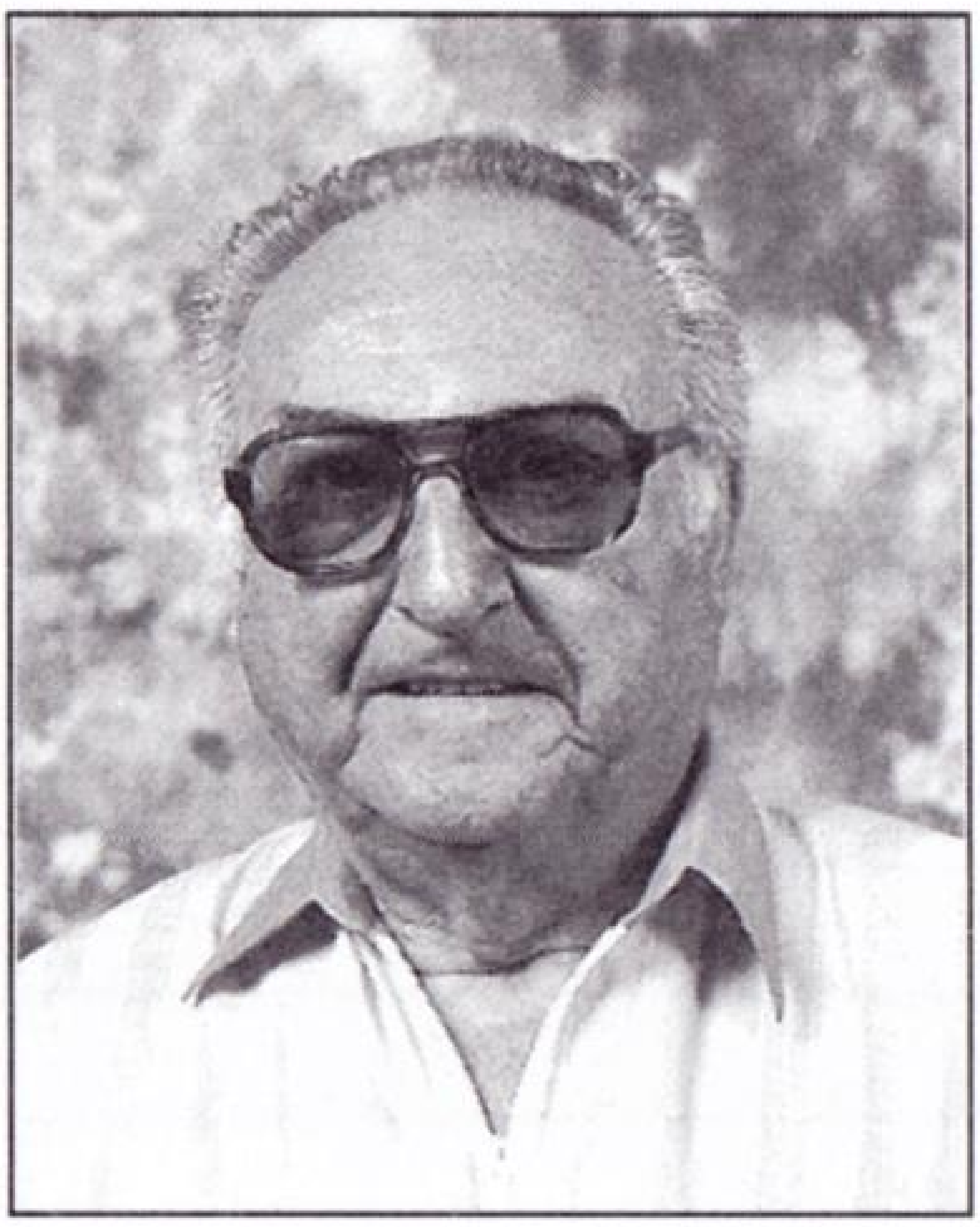

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**Tony Plutino** is a 10-year Motorolan and currently serves as a University Support liaison for Austin based products.

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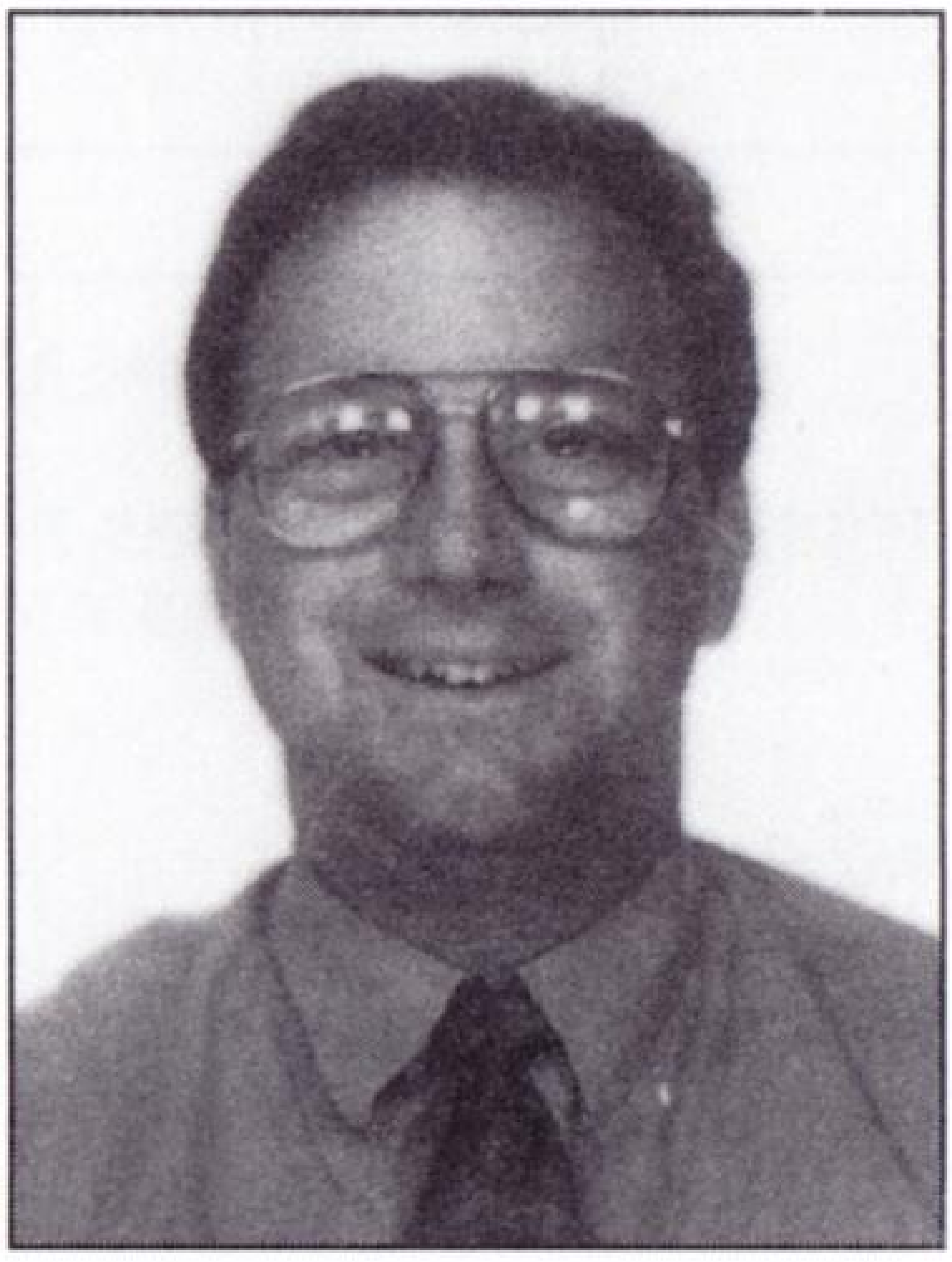

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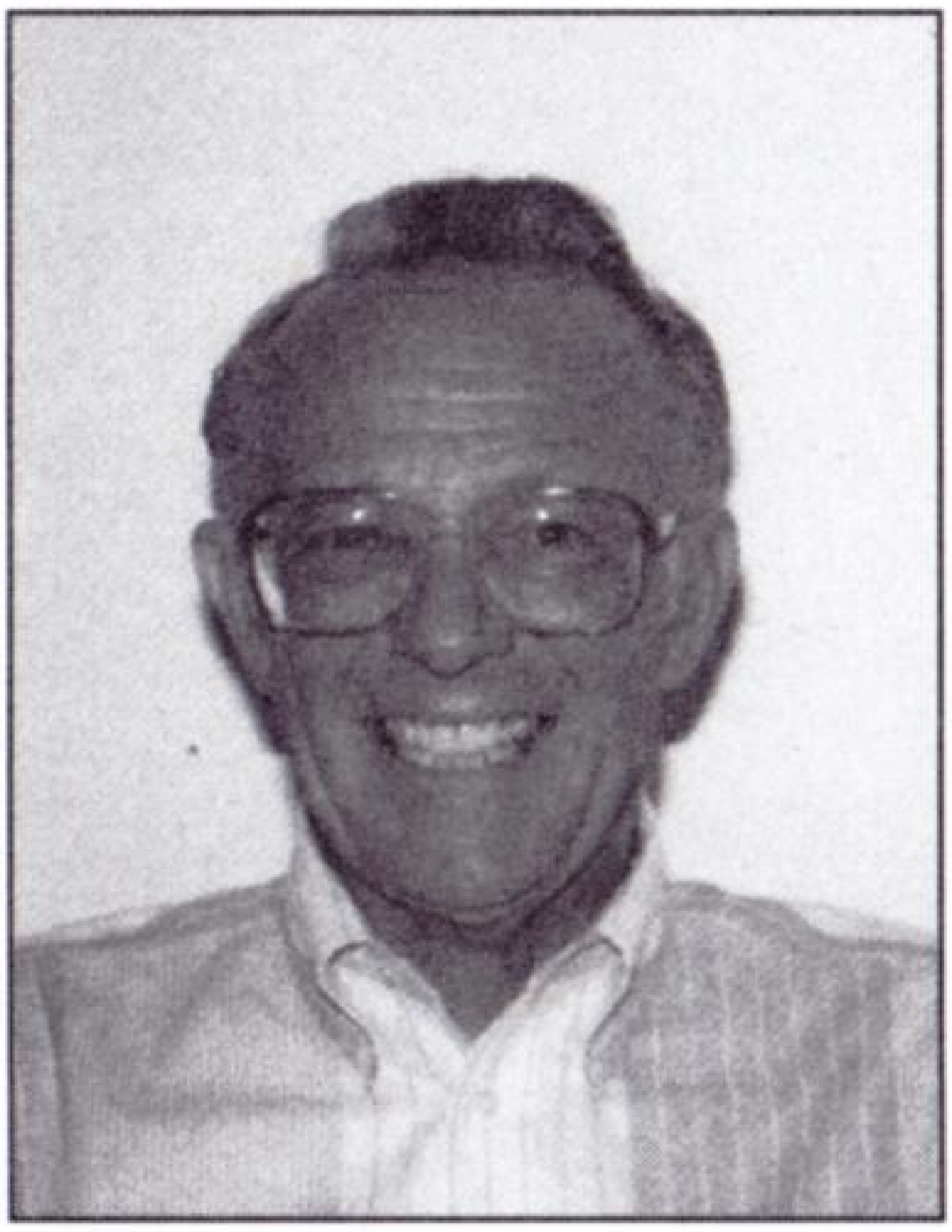

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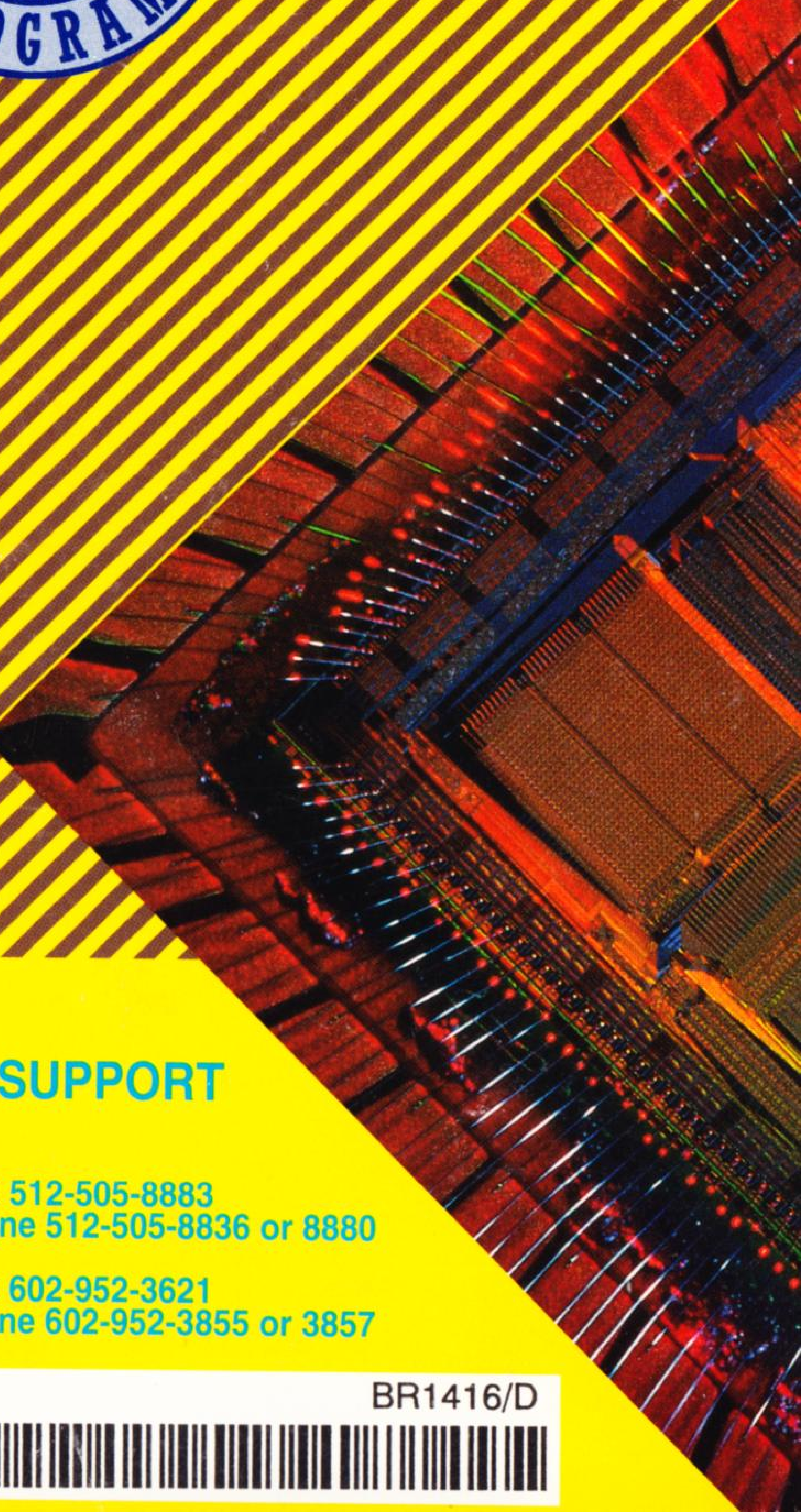

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